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ALL TRAVELLERS agree, that while the English people are far from being remarkable for their taste in the arts generally, they are unrivalled in their taste for landscape gardening. So completely is this true, that wherever on the continent one finds a garden, conspicuous for the taste of its design, one is certain to learn that it is laid out in the "English style," and usually kept by an English gardener.

Not, indeed, that the south of Europe is wanting in magnificent gardens, which are as essentially national in their character as the parks and pleasure-grounds of England. The surroundings of the superb villas of Florence and Rome, are fine examples of a species of scenery as distinct and striking as any to be found in the world; but which, however splendid, fall as far below the English gardens in interesting the imagination, as a level plain does below the finest mountain valley in Switzerland. In the English landscape garden, one sees and feels everywhere the spirit of *nature*, only softened and refined by art. In the French or Italian garden, one sees and feels only the effects *of art*, slightly assisted by nature. In one, the free and luxuriant growth of every tree and shrub, the widening and curving of every walk, suggests perhaps even a higher ideal of nature,—a miniature of a primal paradise, as we would imagine it to have been by divine right; in the other, the prodigality of works of art, the variety of statues and vases, terraces and balustrades, united with walks marked by the same studied symmetry and artistic formality, and only mingled with just foliage enough to constitute a garden,—all this suggests rather a statue gallery in the open air,—an accompaniment to the fair architecture of the mansion, than any pure or natural ideas of landscape beauty.

The only writer who has ever attempted to account for this striking distinction of national taste in gardening, which distinguishes the people of northern and southern Europe, is HUMBOLDT. In his last great work—*Cosmos*—he has devoted some pages to the consideration of the study of nature, and the descriptions of natural scenery,—a portion of the work in the highest degree interesting to every man of taste, as well as every lover of nature.

In this portion he shows, we think, very conclusively, that certain races of mankind, however great in other gifts, are deficient in their perceptions of natural beauty; that northern nations possess the love of nature much more strongly than those of the south;

and that the Greeks and Romans, richly gifted as they were with the artistic endowments, were inferior to other nations in a profound feeling of the beauty of nature.

HUMBOLDT also shows that our enjoyment of natural landscape gardening, which many suppose to have originated in the cultivated and refined taste of a later age, is, on the contrary, purely a matter of national organization. The parks of the Persian monarchs, and the pleasure-gardens of the Chinese, were characterized by the same spirit of natural beauty which we see in the English landscape gardens, and which is widely distinct from that elegant formality of the geometric gardens of the Greeks and Romans of several centuries later. To prove how sound were the principles of Chinese taste, ages ago, he gives us a quotation from an ancient Chinese writer, LIEU-TSCHEU, which might well be the text of the most tasteful improver of the present day, and which we copy for the study of our own readers:

"What is it," says LIEU-TSCHEU, "that we seek in the pleasures of a garden? It has always been agreed that these plantations *should make men amends for living at a distance from what would be their more congenial and agreeable dwelling place—in the midst of nature*, free and unconstrained. The art of laying out gardens consists, therefore, in combining cheerfulness of prospect, luxuriance of growth, shade, retirement and repose; so that the rural aspect may produce an illusion. Variety, which is the chief merit in the natural landscape, must be sought by the choice of ground, with alternation of hill and dale, flowing streams and lakes, covered with aquatic plants. *Symmetry is wearisome; and a garden where everything betrays constraint and art, becomes tedious and distasteful.*"

We shall seek in vain, in the treatises of modern writers, for a theory of rural taste more concise and satisfactory than this of the Chinese landscape garden.

Looking at this instinctive love of nature as a national characteristic, which belongs almost exclusively to distinct races, HUMBOLDT asserts, that while the "profoundest feeling of nature speaks forth in the earliest poetry of the Hebrews, the Indians, and the Semitic and Indo Germanic nations, it is comparatively wanting in the works of the Greeks and Romans."

"In Grecian art," says he, "all is made to concentre within the sphere of *human* life and feeling. The description of nature, in her manifold diversity, as a distinct branch of poetic literature, was altogether foreign to the ideas of the Greeks. With them, the landscape is always the mere background of a picture, in the foreground of which human figures are moving. Passion, breaking forth in action, invited their attention almost exclusively; the agitation of politics, and a life passed chiefly in public, withdrew men's minds from enthusiastic absorption in the tranquil pursuit of nature."

On the other hand, the poetry of Britain, from a very early period, has been especially remarkable for the deep and instinctive love of natural beauty which it exhibits. And here lies the explanation of the riddle of the superiority of English taste in rural embellishment; that people enjoying their gardens the more as they embodied the spirit of nature, while the Italians, like the Greeks, enjoyed them the more as they embodied the spirit of art.

The Romans, tried in the alembic of the great German *savan*, are found still colder in their love of nature's charms than the Greeks. "A nation which manifested a marked predilection for agriculture and

rural life might have justified other hopes; but with all their capacity for practical activity, the Romans, in their cold gravity and measured sobriety of understanding, were, as a people, far inferior to the Greeks in the perception of beauty, far less sensitive to its influence, and much more devoted to the realities of every day life, than to an idealizing contemplation of nature."

Judging them by their writings, HUMBOLDT pronounces the great Roman writers to be comparatively destitute of real poetic feeling for nature. LIVY and TACITUS show, in their histories, little or no interest in natural scenery. CICERO describes landscape without poetic feeling. PLINY, though he rises to true poetic inspiration when describing the great moving causes of the natural universe, "has few individual descriptions of nature." OVID, in his exile, saw little to charm him in the scenery around him; and VIRGIL, though he often devoted himself to subjects which prompt the enthusiasm of a lover of nature, rarely glows with the fire of a true worshipper of her mysterious charms. And not only were the Romans indifferent to the beauty of natural landscape which daily surrounded them, but even to the sublimity and magnificence of those wilder and grander scenes, into which their love of conquest often led them. The following striking paragraph, from HUMBOLDT's work, is at once eloquent and convincing on this point:

"No description of the eternal snows of the Alps, when tinged in the morning or evening with a rosy hue,—of the beauty of the blue glacier ice, or of any part of the grandeur of the scenery in Switzerland,—have reached us from the ancients, although statesmen and generals, with men of letters in their train, were constantly passing from Helvetia into Gaul. All these travellers think only of complaining of the difficulties of the way; the romantic character of the scenery seems never to have engaged their attention. It is even known that JULIUS CÆSAR, when returning to his legions, in Gaul, employed his time while passing over the Alps in preparing a grammatical treatise, 'De Analogia.'"

The corollary to be drawn from this learned and curious investigation of the history of national sensibility and taste, is a very clear and satisfactory one, viz: that as success, in "the art of composing a landscape," (as HUMBOLDT significantly calls landscape gardening,) depends on appreciation of nature, the taste of an individual as well as that of a nation, will be in direct proportion to the profound sensibility with which he perceives the Beautiful in natural scenery.

Our own observation not only fully confirms this theory, but it also leads us to the recognition of the fact, that among our countrymen, at the present day, there are two distinct classes of taste in rural art; first, the poetic or northern taste, based on a deep instinctive feeling for nature; and second, the artistic or symmetric taste, based on a perception of the Beautiful, as embodied in works of art.

The larger part of our countrymen inherit the northern, or Anglo-Saxon love of nature, and find most delight in the natural landscape garden; but we have also not a few to whom the classic villa, with its artistic adornments of vase and statue, urn and terrace, is an object of much more positive pleasure than the most varied and seductive gardens, laid out with all the witchery of nature's own handiwork.

It is not part of our philosophy to urge

our readers to war against their organizations, to whichever path, in the "Delectable Mountains," they may be led by them; but those who have not already studied *Cosmos* will, we trust, at least thank us for giving them the key to their natural bias towards one or the other of the two world-wide styles of ornamental gardening.

POMOLOGICAL NOTES FROM MISSISSIPPI.

BY DR. PHILIPS, EDWARDS, MISS.

Dear Sir—You request me to give you some memoranda of my fruit culture. I do so with pleasure, with the hope that the good cause will be promoted thereby, and my southern friends have a little more light.

You know I have a very extensive variety of fruits, and that I have tried to get the best. My object has been, to have the best for my own use, and to test here the largest variety that I could.

Of peaches, I have been able to prove, down to the present time, the following; and I give my opinion of their relative value:

1. *White Nutmeg.*—Too small for any use, and tree too small a bearer.

2. *Early Tillotson.*—A few days before the succeeding, ripens finely, is a beautiful peach, and only inferior to the true Early York. Tree healthy; no mildew, rapid grower, and bears better than Early York.

3. *Early York*—(true, serrate leaves.)—Is one of the highest flavored peaches I know—equally as pretty as No. 2—rather preferred by me for flavor; but the fruit rots too much. Two years' experience with both.

4. *Early Admirable.*—Beautiful and good. Nos. 2 and 3 better in flavor.

5. *Cole's Early Red.*—This is also beautiful, not so large as the others, fine flavored and rich juice. Not so good as Nos. 2 and 3.

6. *Elmira.*—A large fruit, measuring 8 inches in circumference, (the others 6 to 7,) equally as fine, of good flavor, and worthy of culture. It originated here, the seed planted by myself; but where I got it from I am not positive. It is universally pronounced to be the handsomest and largest peach that ripens before this date. And I am informed that in Vicksburgh it is rated equally high. Indeed, there is some disposition to take from me the credit; but I can prove its origin satisfactorily.

7. *Strawberry.*—Small, and not worthy of culture, where Nos. 2, 3, 4, 5 and 6 can be had.

8. *Yellow Alberge.*—Same as No. 7, as to quality, &c.

9. *Early York.*—The common variety—ripens a few days after the true, is good, but not so high flavored as Nos. 2 and 3.

10. *Burgess' Beauty.*—This fruit is beautiful and good. I am inclined to think it is "Red Rareripe;" as it answers the description in your work, and ripens six or eight days after Nos. 2 and 3.

I have some others, *now ripe*, and will write you again.

I think I can recommend No. 2, ripening at this place, this year, say 6th June. No. 3 ripe same day. No. 6, as ripening about same time, but usually ten days before No. 3. No. 10, as coming in a week after, and good enough for any one. Thus would I discard six varieties; as these are better, and ripe at same time.

Of apples, I have had *White Juneating*;

but it is Early Red Margaret, I think. Yellow Harvest; May—this is the 2d one, I think; Sweet Bough; Red June; Summer Queen, and another, larger than any except the 2d, striped, but not so good.

The Summer Queen I have, has no blush. It resembles, very closely, the Yellow Harvest. [This is not Summer Queen. Ed.]

I would only recommend Yellow Harvest—yellow; Red June—quite red, and Sweet Bough*—beautifully striped; all ripe about the same day, say June 6.

I have fruit from so many sources, that I find some uncertainty, at least in name; but when using your names, I then allude to the varieties that bear your test,—"Fruit and Fruit Trees of America."

I have a few pears, but too few to judge from; and the frost of the 16th of April did some injury to them. In several instances, the pears dropped in a few days after.

Although the frost of the 16th of April would seem to have put the season back, yet the remarkably dry and warm month of April has hastened fruit to maturity, so that the Elmira that has ripened here, some four or five years, usually 15th to 30th June, has ripened here by the 5th this year. Early York usually 1st of July, ripened also 6th June.

I have had roasting ears from the cornfield since the 11th. A few cotton blooms were seen yesterday,—only one week later than last year; but my cotton was not killed by the spring frost, though no one nearer than eight or ten miles was so favored. With great respect, I am yours,

M. W. Philips.

Edwards, Miss., June 14, 1849.

NOTES ON THE BEST STRAWBERRIES.

BY G. W. HUNTSMAN, FLUSHING, L. I.

Dear Sir—Now that another strawberry season is past, it may be interesting to make some remarks upon such kinds as have proved superior. Last summer, *Burr's New Pine* was much praised by those who had it in fruit. With me, it has again fully sustained its previous high character. It is not so large as Hovey's Seedling, or the Boston Pine; but then its productiveness and delicious spicy flavor, in which it is unrivalled, added to its early maturing, (being quite as early as the Early Scarlet,) more than compensate for its inferiority in size, and make it decidedly the most desirable strawberry in cultivation.

It is also a vigorous growing plant; enough so to admit of being cultivated in separate stools, which is by far the most elegant mode of culture, especially in private gardens, where the soil can be made deep and rich; as by this mode, the ground can be covered with straw or litter, which will serve the double purpose of keeping it moist, and the fruit clean.

Next to *Burr's New Pine*, I consider *Hovey's Seedling* the most desirable, which, as it ripens about ten days later, cannot be entirely superseded by it. Hovey's Seedling does sometimes *burn out*. This can be remedied by deepening the soil, and keeping the plants in a high state of cultivation. In a moist, loamy soil, I do not find it to burn. As I have previously remarked, this variety, to attain perfection,

* Sweet Bough is never *striped;* it is probably Early Strawberry. Ed.

must be cultivated either in hills or drills, to admit the free access of the sun.

The Boston Pine has succeeded better with me this season than last. It requires high cultivation and plenty of room. Though the fruit is large and good, yet I think, as a fructifier, the Large Early Scarlet, as regards a crop of fruit, the more reliable.

As a market fruit, I consider the *Crimson Cone* a valuable kind. It is productive, and bears carriage better than most other kinds. It is one of the very best kinds for preserves. If any of our varieties will succeed in the south, this is the most likely to do so; for it is the most hardy and *tough*. Last summer was unusually severe on the strawberry plant; and while other kinds burnt more or less, this continued to grow, and to throw out numerous runners.

G. W. HUNTSMAN.

Flushing, L. I., July 14, 1849.

PAVING TO PREVENT CURCULIO.

BY L. F. ALLEN, BUFFALO, N. Y.

A. J. DOWNING—*Dear Sir:* The depredations of the curculio have almost destroyed our plum crops in western New-York. Until four or five years ago, my own trees bore abundantly, of the finest fruit of all the varieties which I cultivate; but this destructive insect has been so rapidly increasing in my grounds, that last year I hardly had, from fifty or sixty thrifty trees, half a bushel of matured fruit of the *fine* varieties; and none came to perfection except the common blue, or Horse plum, which, for a table fruit, is hardly worth cultivation. Even the Green and Yellow Gages, which have usually withstood the depredations of the curculio, yielded to its rapacity, and left me *plumless*. Since I have been so pestered with these insects, I have tried several remedies which have been published in the different periodicals, and found none efficacious. Salt is of no use. Thumping the tree proves of little avail, besides being a perpetual labor; and picking up curculios, which hop about like fleas, while you are shaking them together on a sheet, seems after all but a *puttering* business; and as for planting every tree over a dung-heap, that is quite out of the question. Neither does letting the chickens or pigs run among them answer the purpose. The curculio thrives in spite of them.

For some years past, I have heard of the plan of paving under the trees; and one or two gentlemen of my acquaintance, who tried it in one or two individual cases, believed it to be efficacious. An instance of this kind has recently come to my notice, which seems so conclusive that I think it worthy of notice. Being at Lockport last week, I called to see my old friend, Lyman A. Spalding. Esq., who has a fine fruit orchard and garden just out of the village. His soil is a sandy loam, slightly mixed with clay—just enough to give it consistency—based on a coarse sand, with occasional veins of clay subsoil, in a limestone region; a charming soil for all kinds of fruit,—as those he has in cultivation, several hundred in number, testify. Mr. Spalding is a good pomologist, and pays great attention to his fruits; and suffering se-

verely by the depredations of the curculio, four years ago he paved part of a row of plum and apricot trees, which stood twelve feet apart, with thin flat stones, which are abundant and cheap in that vicinity. The flagging was continuous through the row as far as it extended, and spread six feet each side from the stems of the trees. The consequence has been, an effectual cure for the curculio upon the *paved* trees, both plums and apricots, ever since he put the flagging down, which has been for three successive crops; while on the trees which were left *unpaved*, the fruit has been regularly destroyed in every one of those years. So fully has he become satisfied of the efficacy of the flagging system, that the present year he has paved his remaining trees, the fruit of which I examined, and found no sign of the curculio among it. The remedy appears to me conclusive. The insect can neither, if in the ground, dig up through the flagging, nor, if on the tree, when fallen, burrow into it, except through the seams of the stones or bricks which compose the pavement, which Mr. Spalding suggests should be filled with water lime grouting, or leached ashes. Indeed, he laid his stone flagging on a thin bed of leached ashes, spread under the trees, which is a lasting manure for their support. If, however, grass or weeds spring up between, a coating of salt, sown upon the flagging, will effectually cure the evil.

Now to the expense. Mr. Spalding's case, as Lockport affords large quarries of thin stone, which are extensively used in Buffalo and Rochester for paving purposes, the smaller, unmarketable pieces, one to two inches thick, which he uses, can be obtained for two to three dollars a cord, delivered at his gardens, and the chief expense is in laying them, which need not exceed fifty cents a tree; and a cord would probably flag four or five trees. But as every one is not so eligibly situated, I will take bricks as a standard, which, according to locality, can be delivered at $3 to $4 per 1000. A brick of usual size, 8 by 4 inches, contains 32 superficial inches; 4½ bricks, therefore, will pave a square foot. Suppose your plum trees are planted 12 feet apart,—they need not, I think, be paved more than four feet on each side the trunk of the tree. For if it be the fact, as is generally conceded, that the curculio passes up the body of the tree, that distance on each side will be sufficient. Let the flagging be continuous throughout the row, which will give 96 feet to each tree. This will consume 432 bricks, which, at $4 a thousand, will be $1.73. The paving can be done for 50 cents; costing, altogether, $2.23 each,—not a large sum, when a bushel of choice fruit annually, worth two or three dollars, can be had from every tree so paved.

If the ground be in good condition, the flagging will not need to be taken up for manuring for many years; and nothing can be more friendly to the roots, in the way of moisture, than this flagging; for I never have seen thriftier trees than those grown in the paved streets of our cities and villages. The experiment is worth trying at all events; and if successful with others, as it has been with Mr. Spalding, it is certainly worth universal adoption.

Yours very truly, LEWIS F. ALLEN.

Black Rock, June 23, 1849.

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This is an excellent mode, which has been practiced successfully in the neighborhood of New-York and Philadelphia; but the hint will, no doubt, be both new and valuable to the larger part of our readers.

We still think that pigs and poultry are the cheapest and most serviceable preventives to the curculio, when the trees can

be planted in yards which are thoroughly *investigated* by them. There are doubtless cases where, from incomplete arrangements, this mode may have failed, as, indeed, we have known paving to do; but in all instances, where thoroughly carried out and persevered in, it will be found an efficient and cheap mode. Meanwhile, paving is nicely adapted to the amateur's garden. Ed.

HOW TO MANAGE FRUIT TREES.

BY A PENNSYLVANIA SUBSCRIBER.

I have gained two pieces of information from your journal, which I consider invaluable; and as I fear some of your readers may not have been so much struck with their importance as myself, I shall venture a few words to call attention.

I allude to the absolute necessity, in this climate, of shading the trunks of fruit trees; and the no less important fact, that the mulching the soil greatly promotes the health, and vigor, and longevity of a tree.

My eyes were first opened to the great value of *protecting the trunks* of trees, by allowing the trees to form *low heads*, as close to the ground as possible, by reading the masterly article on "Vitality and Longevity of Trees," by Professor Turner, at page 130 of the last volume of your journal. That able correspondent proves, conclusively, to my mind, (and I have by many observations since very fully verified his theory,) that just in proportion to the heat of the climate the trunk of a tree needs shelter; that in a state of nature, all trees which grow alone, and not in woods, where they are sheltered by others, put out branches near the surface, so as to hide and shelter the trunk; and finally, that all fruit trees would do the same if left to themselves, and not continually mutilated and robbed of their fairest proportions by the saw and knife of the "trimmer."

What, indeed, can be more rational. A few days since, we had four successive days when the mercury in Fahrenheit's thermometer stood above 90 degrees all day long in the shade. I took the trouble to hang the glass at midday against the trunk of a peach tree in the full sunshine, when, to my surprise it rose to 130 degrees. Now it is next to impossible that the sap-vessels should not become almost baked; and it is not a matter of the slightest surprise to me, that we find the trunk and principal branches oozing out *gum*, and the tree looking feeble and sickly.

Nature has fitted the upper surface of *leaves* to bear the most powerful sunshine; and the constant perspiration through this upper surface of the foliage keeps them comparatively cool. But it is not so with the bark; and if the stem of a delicate tree is exposed to those intense rays of the sun, feebleness or disease must inevitably follow.

I have had a striking proof of this truth before my eyes the past month. Bordering my garden walk are two rows of fruit trees,—each row containing six apricots and twelve peaches. They were both planted five years ago. One of these rows has been headed back, so as to keep the trees quite bushy and low,—the lower branches starting out within a few inches of the ground. (This was done to test more completely the value of the shorten-

ing-in pruning, and before I knew the value of shading the roots.)

The other row has been grown in the usual way,—as standards; that is, the trees have been trimmed nearly as high as one's head, so as to leave the trunk and lower branches fully exposed to the sun for a good part of the day.

The difference between those two rows of trees is a very remarkable one, even to the general observer. The low headed trees, in the first place, are unusually full of foliage; the leaves themselves are large, and the shoots luxuriant; and the trees have that dark green look, which is the unmistakable sign of good health. The crop of fruit is healthy, hangs on well, and promises to be large and excellent.

The high-headed trees, whose trunks are exposed, are some few of them in excellent health; but none of them compare in richness of foliage with the low-headed ones; and about two-thirds of them have a stunted and feeble appearance. Two of the peaches, and three of the apricots have died with "gum;" and they all show a meagre growth, when contrasted with those in the other row. Besides, I find, since the two "spells" of very hot weather that have occurred this summer, these bare stemmed trees are gradually shedding a considerable portion of their fruit.

To satisfy myself more completely of the positively injurious effect of the sun on the trunks of trees, and on the roots where the soil is not shaded by the spreading branches, I covered the ground beneath one of these bare stemmed trees with litter four inches thick, and bound a few handfulls of straw around the trunk, to guard it from the sun.

I find this tree more healthy than any other in the row, making luxuriant shoots, and holding its fruit well, and not appearing in the least affected by our hot or dry midsummer.

I am, therefore, a warm advocate of the practice of giving all small fruit trees *low heads*, so as completely to shade both the trunk and the roots. And I offer you the foregoing facts for the consideration of your readers; [which we are certain they will profit by. Ed.] Respectfully,

A Pennsylvania Subscriber.

THE GOOSEBERRY GRAFTED ON THE YELLOW FLOWERING CURRANT.

BY S. MILLER, NORTH LEBANON, PA.

Sir—I noticed an article in the Horticulturist on this subject, but at the time doubted its utility. What I have seen since, however, satisfies me that the thing will succeed admirably.

Last autumn I had occasion to get some trees of D. Miller, near Carlisle, Pa., (I believe the discoverer of the value of this particular stock,) and, among other things, a neighbor of mine had from him gooseberry plants on the currant. It seemed to me an insignificant matter, and would have escaped my memory, had I not been requested by him, a few days ago, to examine it.

The stock is about five feet high, a straight, clean stem, with about five branches, which have grown, some of them, six to ten inches this season; and such gooseberries as it then bore, cast all the result of my cultivation (along with whale oil, soap washing, and sulphur,) far into the shade.

The berries were much larger than any I ever have seen; and I have purchased many of the finest English and American varieties, and cultivated them after most approved modes; but in spite of all my care and pains, they will all mildew, except one variety, a rather small kind, which we got under the name of "Pale Red," which never mildews with us, and is an abundant bearer.

The kind of gooseberry above alluded to, on the currant, is the "Roaring Lion," and the fruit was as free from mildew as anything could be; while a bush close beside it, of the same kind, well trained and cultivated, but on its own stock and root, showed a crop pretty much mildewed, and the fruit not half the size of the former.

In my opinion, it is the elevation as much as anything else, that prevents the mildew on the Missouri currant stock; as it is free from the shade and dampness, which the low heavy stocks are exposed to. I am undertaking pretty extensively the propagation of Missouri currant stocks to graft my gooseberries upon, and am strongly of the opinion that when this mode becomes generally known, it will greatly facilitate the extensive cultivation of the best English gooseberries. I will only add, that I have seen other instances besides the one quoted, and equally successful. Yours respectfully, S. Miller.

THE MANAGEMENT OF GREEN-HOUSES.

[FROM THE LONDON HORT. MAG.]

One of the principal points to look after in the commencement of a greenhouse management, is to provide near it a room or shed in which all the littering business, such as potting, cutting down, pruning, shifting, and other dirty work may be done. In this there should be a strong table, a bin with several partitions, in which particular composts should be separately kept; these to be filled with—

1. Peat rubbed through a very coarse sieve.
2. Loam from rotted turfs.
3. Potsherds, or broken flower pots of two or three sizes, kept separate.
4. Leaf-mould, being leaves that have rotted into mould.
5. Dung from a melon or cucumber-bed rotted to mould.
6. Silver sand, or very clean river sand.
7. Cow-dung rotted into mould.
8. Turfy peat, merely chopped into small pieces, of say half-an-inch to an inch square or solid.
9. Loam from the top spit of a pasture, without the turf.
10. Horse droppings rotted into mould.

But if there be not convenience for all this, or they cannot be got at, peat (No. 1), loam (No. 2), potsherds (No. 3), and dung (No. 5), are absolutely necessary, and could be made shift with. Then there should be trowels; short blunt-ended sticks of different sizes, to poke down the soil round a plant when shifted from one sized pot to another; scoops like a coal-scoop, to take up the different soils, and by which the pots may be measured as they are taken; sticks of all lengths for supports to plants in pots; flower pots of various sizes, from those called *sixties* to the largest, called *ones*. These sizes comprise wide-mouthed and uprights, between which there is very little difference in the quantity of mould they will contain, but one is formed with nearly straight sides, the other wide at the top and tapering at the bottom, and of course there is a difference in the diameter across the top; there is also a different form, and a slight difference in the measure between one pottery and another. However, as the most general, and therefore the

guide for any who propose to follow our directions, the measure of the various sizes may be thus estimated, especially necessary perhaps, because some writers say three-inch, or six-inch pots, instead of sixties or thirty-twos. The measure runs thus:—

	Wide.	Deep
Thumb pots, sixty to the cast, are....	2½ in.	2½
Sixties, that is, sixty to the cast.....	3	3¼
Forty-eights, forty-eight to the cast...	4¼	5
Thirty-twos, thirty-two to the cast....	6	6
Twenty-fours, twenty-four to the cast..	8	8
Sixteens, sixteen to the cast.....	9¼	9
Twelves, twelve to the cast.	11	10
Eights, eight to the cast.....	12	11
Sixes, six to the cast.....	13	12
Fours, four to the cast.....	15	13
Twos, two to the cast.....	18	14

Besides these, there should be a number of bell-glasses, of the sizes necessary for most of these pots, so that the edge of the glass should come half an inch within the edge; pruning and budding knives, and pruning pincers, a very handy instrument, by which a lady may, without exerting much strength, snip off a branch as thick as her little finger; bass matting in skeins or lengths should hang across nails all ready for use, for although the bass gets harsh and dry, it only requires wetting when used to make it tough. Everything should be ready for use without delay, for nothing is worse than to be obliged to leave a job to procure anything that may be wanting. Labels of wood or zinc of all proper sizes, and wooden ones, should be painted black, because when used they should be covered with white paint where the writing is to be placed, and a sharp-pointed stick will make a distinct mark through the white paint, showing the black underneath it; the white paint cannot be laid on too thin at the time the writing is to be done. Wire trellises for climbing plants of such sizes and shapes as are best adapted for the several species, and boxes or pans about six inches deep for the purpose of sowing seeds in, will be found requisite. A small nest of drawers for the preservation of seeds, as well for the borders as the house, and shelves for placing things on out of the way; watering pots of various sizes; a portable garden engine or syringe with roses of various sized holes for the distribution of the water in different degrees of quantity and force. All these things are desirable, and anything short of this makes more work, although it is quite possible to do without any of them but the pots and the soils, and these, if the worst come to the worst, might be put in some corner out of doors. It is not our business to show how things *may be done;* we have shown how they *ought to be done*, and the nearer these conditions can be complied with, the better. We next come to the

CHOICE OF PLANTS.

As a greenhouse is, properly speaking, a house for the protection of plants from frost, and no more, and is the only description of house in hundreds of establishments, we look for a tolerably miscellaneous collection of different families, likely to make the best show and continue in the best health. A hundred families of plants would do well in a greenhouse, but nobody with any taste would try to grow a large number of families, but would more judiciously endeavor to grow a number of the best varieties in each family of more choice genera. And some few may be commenced with as the most eligible, while others may be left to be picked up as they may be met with and admired. The following are essential, because they can scarcely be beaten for effect:—

Azalea indica, half a dozen varieties; Camellia japonica, the same number; Geraniums, the like number; Hovea *Celsii* and *ilicifolia;* Chorozema *varium* and *rhombeum;* Acacia *armata;* Epacris *grandiflora*, *miniata*, *impressa*, and *campanulata alba;* Boronia *serrulata;* Calceolaria, six varieties; Cereus *speciosissimus;* Epiphyllum *Jenkinsonii* and *truncatum;* (the three latter better known as Cactus *speciosissimus*, *Jenkinsonii* and *truncatus*); Cineraria, six varieties; Orange, Lemon, and Lime; Crowea *saligna;* Cyclamen *persicum*, and *persicum roseum;* Daphne *indica odorata;* Erica, six varieties; Fuchsia, six varieties; Hydrangea; Ixia, six varieties; Tropæolum *tricolor*, *Lobbianum*, *azureum;* Crassula *coccinea* and *falcata;* Cytisus *racemosus;* Lilium *japonicum*, two varieties; Verbena, six varieties; Styphelia *tubiflora.* Although we could mention plenty more, there are already mentioned

eighty-four pots, if there be only one of each variety; but these are all subjects that may rank high as rich and beautiful plants, blooming at different periods. If the greenhouse would hold more, and a lady is inclined to grow more species, instead of doubling some of these, let them be selected at nurseries according to fancy. If we had to recommend, we should say double the number of varieties of Camellia, Erica, Cineraria, Fuchsia, Geranium, Calceolaria, Ixia, Verbena, and Azalea indica; or if not the latter, have duplicates of each sort of the best six. Very few plants could be added with so much advantage to the collection, as increasing the varieties, or doubling those mentioned. We are to presume that these plants are purchased in nursery pots, and it must be taken as a general rule, that no plant must be kept in the nursery pot without examination. Our business, however, must be to take family by family, and so direct the fair cultivator, that no vast error can be committed.

STATE OF THE HOUSE.

The temperature of the greenhouse is important; a free ventilation is desirable, nay, absolutely necessary, but a current of air is to be avoided; it is as injurious to plants as to persons. Two doors opposite to each other should not be open, unless the weather is very still, and all the front windows are open also. In cold weather and when the wind is chilly, the door at the windy end should never be opened. It is better to open all the front windows in mild weather, unless the wind blows on them, when they are better closed, and the top lights let down a little. In very damp weather the fire should be lighted to dry the house, and the top lights be lowered to let out the steam. In frosty weather, when there is danger in leaving the house without fire, it should be lighted all day; and even in a frost the top lights may be down a little, but the glass must be watched, and at night, instead of making up extra fire and closing all the house to increase the temperature, have proper persons to attend, and to see that the house is not warmer, nor so warm if possible, as it was in the day. Thirty-five is high enough for the night, but few trust to it, because three degrees lower is frost; forty-five is, however, quite as much as it ought under any circumstances to reach at night, for there is not one greenhouse plant that does so well with fire heat as without it, if there be no frost.

There are different dispositions and habits among the families we have mentioned, but they will all do well in the same house, by giving some the coolest and others the warmest place; but care should be always taken to have the house cooler by night than by day, whenever it is practicable. Nevertheless, there will be times when the severity of the frost, with a wind to assist it, will so lower the temperature, that all the fire you can give the house may be only sufficient to keep out the cold and prevent the temperature from going down to freezing point. As regards giving air, even in the height of summer, if there be plants in the house, there should be no thorough draught from end to end; let the top lights be down, and the front lights open, and then there is a circulation all over the tops of the plants, but no draught through them.

PLAN OF A STAGE AND SHELVES.

The front of the greenhouse is the most valuable part; a shelf along the top, just over the front windows, and under the roof, is essential, as it holds all small things that want to be near the glass. The table, or broad shelf in front, at the bottom of the front lights, should be as wide as two feet, for it is of great service for many plants that require constant care and attention; they are easily got at, they are near the light, may be turned round easily every day to prevent their growing one-sided; and this front should be wood trellis-shelving instead of solid, or instead of stone or slate; nevertheless, if it be solid, strips of lath should be laid along, an inch or so apart, so that the bottoms of the pots may not be on a flat place, so as to exclude the air from the drainage-hole. There should also be a good shelf on the back wall near the top for such of the plants as want most air and least warmth, especially for things that rest all the winter, and the main stage should be as near the glass as it is possible to construct it, due regard being had to the growth of the plants. There should not be

more shade than cannot be avoided; light is essential, air is essential, and, above all, room for the free play of this air is essential; though it is pretty generally the practice to put the plants in a greenhouse as close together as possible, there ought to be as much room between them as they occupy; and the nearer you can comply with this, the better they will grow. Cleanliness is also one of the great requisites for the health of plants; dead leaves, damp corners, dirty shelves, decaying flowers, and litters of any sort are injurious: whatever the damp can hang about, is likely to produce mildew; the drawing-room itself does not require cleaning more than the greenhouse, if we intend to do the best with the plants.

WATERING THE PLANTS.

The best water for plants is rain; not a quart should ever be wasted. A tub, or a tank, should be inside the house, and the entire rain from the roof should be conducted by a pipe to the inside; nothing is more simple and attainable, nothing more valuable than a contrivance for a supply of rain-water. Next to this it is desirable to have it the same temperature as the atmosphere of the house. One-half the plants that are unhealthy have been chilled by the watering, and, in many places, where they can only get spring water, they are very unsuccessful; some do not know why, but there is no difficulty about establishing the fact. Hard water is injurious, mineral waters are often so; river water is next to rain in value, if it be soft; but even that ought never to be used cooler than the air of the house. Pond water is next to river, if there be nothing noxious flowing into it, but all of these are poor apologies for the rain-water, conducted into the house. Some caution is required in one respect; when the wood-work has been fresh painted, the water will poison anything, so that it must be turned away until it neither tastes nor smells of the paint. In the mean time, some pains must be taken to get good water. With regard to the mode of administering water, only those within reach may be said to belong to ladies' work; but it is quite necessary they should set one who understands it to do the rest, for too much or too little water is fatal. No plant should be watered while the soil is moist; but it is as essential, that when it is watered, all the soil in the pot should be moistened. There is another point that requires attention. If, while other plants are apparently dry, any one seems wet, it should be examined, to see if the drainage be free; because it will be obvious either that the plant cannot absorb so fast as the rest, or that the water has not the means of draining away; if it appear that the drainage is clogged, the ball must be relieved of the crocks or other matter put in at the bottom, and which will appear to have got the soil run among it, and fresh crocks must be put in. A plant suffers as soon from want of the supply of air, and a too great supply of water, as it does from a deficiency. The cistern, tub, or tank, being handy to draw or dip water from, a lady can use just such sized watering pot as is most convenient to handle, and go round the plants to give only such as are dry the requisite moisture, not just a sprinkle at top, but as much as will cause a surplus to run out at bottom. The earth should be examined to see if it be close to the side, if not, the watering has been too long neglected; for the first symptom of suffering, or danger of suffering, is the shrinking of the ball of earth, and if this be not noticed, the water then given proves useless, because it runs down the vacancy between the ball and the pot, and does not soak in at all.

MANAGEMENT OF AZALEAS AND CAMELLIAS.

The Azalea indica, and Camellia japonica, are as hardy as any of the greenhouse plants, and want as little labor as any, although they must have attention. When these plants are advancing their buds towards blooming, they want abundance of water, and to be placed in the part of the greenhouse least subject to draught, or wind. They will do on the general stage, and may be, for the sake of appearance, set about in different parts, but not too near the door. They should be turned frequently, so that one front should not be better than another, and they will keep in flower a long time in perfection. As the flower goes off they begin to make their new growth; they want turning daily just as

much in this period as any, for they are shaping themselves, and if left to themselves without being moved, they would assuredly grow one-sided. In the middle of June they may be taken out and placed in a sheltered spot, with plenty of room, distantly shaded from the extreme heat of the sun; and if there were a canvas house, such as tulips are grown under, nothing could be better, because they can have all or part of the air or sun according to their wants, while they can be entirely protected from those drying winds which injure every tender or half-hardy subject that is exposed to it; but, in the absence of this, we must be content with the most sheltered spot we can find in the garden. The ground should be such as the roots cannot penetrate, and the watering must be attended to diligently; nor ought a rainy period to prevent the same attention. for it will often be found that a bushy plant throws the rain entirely outside the pot, they therefore require examining in rainy weather as well as in fine. When they have made their growth complete, they ought to be placed in the coolest part of the garden, and the quantity of water lessened considerably; they will want only such moisture as will keep them alive, and as they do not absorb much while at rest, this will be very little.* In September you may restore them to their places in the house, first examining the balls of earth to see if their roots are matted round the sides of the pot; if so, change these pots for those of a size larger. When the plants have done their bloom and are making their growth, whatever is growing out of form should be cut off. If you want to propagate the Camellia, do it by inarching, and the Azalea by cuttings, in sand, under a bell-glass, and if you have it, in a slight hot-bed, with a little bottom heat. The Azalea and the Camellia grow best in loam (No. 2) two-thirds, peat (No. 1) one-third, and the pot should be one-fourth filled with crocks,

THE CINERARIA, VERBENA AND CALCEOLARIA.

These plants are idle and rest in the winter months, but flower a considerable time when they begin. They require a good supply of water when they begin to grow, and should be placed near the light when their flower-stems rise; when they decline their bloom, they may be parted at their roots, or their side shoots taken off with or without roots; if without, they should be potted and covered with bell-glasses, but if with roots, they may be placed in a shady spot in the garden, on a hard bottom. Strictly speaking, all three of them may be called frame plants, but the distinction is not easily defined, and they do well in a greenhouse; they may be placed on the highest back shelf in September, and will seldom require watering; but, in a good stock of Verbenas and Cinerarias, the plants need not be parted nor propagated, and the pots may be enlarged by change. Many of the plants will flower in winter and early spring. It is only the small newly made plants that need be put up out of sight, for anything that gives a flower in the winter is acceptable. Some of the Verbenas will be dwarf, others require to be supported on a trellis, but the young ones may be turned out into the borders and beds in the spring to flower the whole summer. The Calceolarias will also require supports for their main flower-stems sometimes, though those are the best that support themselves. The soil in which these plants thrive is, half loam (No. 2,) a quarter cow-dung (No. 7,) and the other quarter peat (No. 1,) well mixed The cuttings strike easily in pots filled all but an inch with the soil, and one inch of sand; the bottom of the cuttings should touch the soil and go through the sand, but not enter the compost, though they will send their roots into it when they strike. To grow any of these large, they must have constant shifts from small to larger pots. All dead leaves must be removed.

ERICA, EPACRIS, CHOROZEMA.

This family is perhaps the most difficult to manage, because so small a neglect is fatal. The soil in which it succeeds best is poor, at least, comparatively so, for it is easily destroyed if much excited; the compost that answers best is four-fifths or parts of (No. 1) peat, and one-fifth or part of loam (No. 2.) If it happens that the peat is not sandy, it may be necessary to put sand to

* In our dry climate much more water will be required in summer than in England, and the pots must be well watered, daily, to prevent the soil about the roots from becoming parched.—Ed. Hort.

it, not exceeding one part. Good turfy peat is, however, generally sandy enough. This should be well mixed together, so that the roots shall find all the soil alike, and not more loamy in one part than other. This compost being comparatively poor, and very pervious to water, the greatest possible attention is required as to the watering; and this may be generally applied to soils of which the greater part or any considerable part is peat, for the water runs through it quickly, and when it is once neglected till dry, the plant suffers, if it does not die. Every time a heath wants water too long together, some of the lower leaves turn yellow and fall. This makes so many naked stems to heaths of any size, but a worse effect is caused by giving too much, or by the stoppage of the proper drainage of the pots. The more full a pot is of roots, the more constant must be the watching and necessary watering, because the water cannot be held so long by the small quantity of matted soil, as if there were but few roots. In some cases a heath may be wanting water twice a day. The cuttings of heaths should be taken from the last produced shoots, two inches, or one inch, in some cases, long; the lower half should be stripped of the leaves, and the upper half have all left on. Get a pot of heath soil filled, all but half an inch or an inch of sand, according to the cutting; water the sand so that it may be saturated with wet, and stick in these cuttings so that they just touch the soil, but not go into it; cover with a bell glass, water with a very fine rosed water-pot, so that the sand shall never be thoroughly dry; wipe the glass dry inside every morning; let them be in a cool part of the greenhouse, and be shaded from the sun; when they set off growing well, you may conclude they have struck root, and pot them in sixty-sized pots. They may be kept in a common garden frame all the summer, if you please, or in the most airy part of the greenhouse. Here they may be shifted as they fill the pots without roots, and require but ordinary attention.

GERANIUMS.

The soil, for the healthy growth of this family, may be of loam (No. 2) three parts, dung (No. 7,) or for want of it droppings (No. 10,) or if neither can be had, dung (No. 5) one part; peat one part, well incorporated. Cuttings may be struck whenever they can be got, but the usual time for any quantity is July, when everybody cuts down the old plants. These require no care whatever. If they are put in the open border, and shaded, they will strike; but those who have choice kinds will cover them with a hand-glass, and place them all in the shade; when struck, pot them in sixty-sized pots, pinch out the top to induce side shoots, and leave them out of doors until September, simply changing their pots if they get too full of roots; when removed to the green-house, examine the roots, and, if necessary, remove them into larger pots, and place them among the other plants to take their chance. The large plants, when they have done flowering, may be cut down to such skeleton shape as shall give a chance of growing handsome; and let them remain out of doors, shifted into a size larger pot, or trimmed up about the roots to go into the same with fresh loam. In September remove them also to the house. If any of the shoots come so as to cross others, rub off those which are least wanted, to give strength to the others and keep the plant in form. If any shoots grow too vigorously for the rest of the plant, pinch off the end, and so regulate the growth in this particular, that it may be handsome. As the blossoms come out they will require shading, or they will not remain long in bloom. When in flower you do as you please with them until the flower declines, and then turn them out of doors, cutting them down again in July, putting them back into the house in September.

CEREUS, EPIPHYLLUM, CRASSULA.

These subjects take any soil better than that which has been popularly recommended. They do not require to be starved. A compost made of loam (No. 2) one half, peat, (No. 1) one quarter, and dung (No. 7 or 10) one quarter, will grow them well.—They want but little water all the winter, and as their buds begin to swell they may have a supply. After they have done flowering, turn them out of doors, place the pots under a south wall, or in the hottest part of the garden. In September, remove

them to the house again. The Crassula may be struck from cuttings as easily as the others, and if left on the ground without inserting at all, will throw down its roots sideways into the earth of itself. Small pieces, however, are generally selected, and after drying the juice, inserted in small pots, where they are treated from the first like plants, and shifted from time to time as they fill their pots. The Crassula carries its blooms on branches at the ends of the shoots; consequently, as soon as it begins to grow from a cutting, the ends are taken off to induce side shoots, and thus form a handsome bushy plant with many heads of flowers, in the one case (coccinea) scarlet, in the other (falcata) orange. The shifting is always best after the flowering is done. The Cereus and Epiphyllum require much such treatment at first. E. truncatum should be stopped until there are branches enough to hang down all around the pot, for the habit is weeping, and the flowers come on the ends of all the branches.

GENERAL RULES FOR THE MANAGEMENT OF GREENHOUSE PLANTS.

In mild weather, and during winter in particular, if there is any warm gentle rain, a greenhouse plant of any kind is greatly benefited by exposure to the air; not that it is possible to remove all the plants in a greenhouse out of doors whenever the sun shines in winter, or a warm shower comes, but it is as well to know this, because we all have our favorite plants, and we can always put out a few of these when the weather is favorable.

Never indiscriminately water the plants in a greenhouse, because where there is a mixed collection of various families, some will be found to absorb much more water than others, and it is quite as bad to give too much as too little water. Half the plants in dwelling houses are spoiled by excessive wet, and especially where the pots stand in saucers to prevent the wet from running over the place when they are watered. In greenhouses we have seen this where ladies are very fastidious about the cleanliness of their shelves; but laudable as cleanliness may be, it is running the greatest possible risk to let plants stand in water. Occasionally examine the pots and turn out the balls of earth to see if the roots are matting round the side, for it is the best rule for removing a plant to a pot of a larger size. If the plant is growing, it requires it more than a plant at rest; for a plant at rest should never be excited until it begins to advance of itself; besides, when a plant is set for bloom, and about to take its rest, until the buds swell by a sudden excitement, such as being placed in fresh earth, or having too much heat or water, the bloombuds get blighted, and the germs of the leaves and branches take up the growth, the former being unable to take the fresh supply, because flowers can only take a certain quantity, and the others being unlimited in their means by naturally extending themselves so long as there is a competent supply. The time, therefore, to examine the roots, is when a plant begins to make its growth, or at the decline of the flowers. There need be no other rule for changing pots, but the filling of one with roots; generally, however, once in a season is enough for established plants, and that is after they have flowered, and before they make the next season's growth.

Constantly turn plants round to prevent their growing shabby on the side which is in the dark, or comparatively so; and also to prevent its making only one handsome front. All plants should be alike on every side; and although it may give some trouble, it amply repays us by the improved condition. Nothing looks worse than a plant with but one good face, and the others discoloured, or leafless or warped. Always give plenty of room to plants; the light and air should be able to reach them all round. The best rule is to let there be just the same room between the plants as the plants occupy; but greenhouse room is so valuable that this is rarely allowed. Nevertheless, it does not alter the fact, that the more room plants have, the better they grow; and nothing does more harm than to place them close enough to darken the backs of the rows.

If you want plants bushy and short, you must keep pinching off the ends of branches that grow upwards; but, as the perfection of a plant is to be full of branches and leaves to the very edge of the pot, this operation of pinching must begin early, even

when the cutting has just struck, or the seedling, if the plant be from seed, be only three or four joints high; but those plants which grow pyramidal in form must have the leaders preserved, and should only have such branches stopped as are inclined to come too long; such as shoot out faster than the rest.

Deciduous plants should not be watered after they drop their leaves; but when they begin to swell their buds, they may be supplied with a little moisture, to be increased in quantity as soon as they shoot out their branches.

Seeds of green-house plants are best sown as soon as they are ripe. Nature points out this for all seeds; but artificial culture, or a change of climate, suggests various changes in the plan of doing many things; for instance, a tender plant may be sown in the open borders in the spring; and as it will meet with no frost until autumn, it is quite proper to do so; but if the seeds were sown directly they were ripe, they would come up only to be killed by the frost. Not so with greeen-house plants; they are in a droper climate. If they come up they will grow without interruption; and if they are in the habit of lying in the ground till genial, or, we ought to say, till warm weather, where they grow naturally, they will do the same in a green-house, unless the temperature be prematurely raised. In all matters of doubt, we ought to make sure on the safe side. Foreign seeds, therefore, ought to be sown the instant we get them; because, next to sowing them at the time nature herself sows them, it is well to do so as soon after as possible.

All seedling plants are the better for pricking out, or transplanting. as soon as they have three or four leaves; and the most effective of all methods is to get small sized pots, say *sixties*, and plant the seedlings round the edge, close to the side of the pot, about three in a pot, or four, or even five, if they are small slow-growing things. They derive the greatest benefit from their roots reaching the sides of the pot.

As you may be at a loss for the soil in which a new plant grows, use a compost that everything will live and grow in, and leave to time and experience any improvement you may make. Take loam (No. 9) which is presumed to have no dung or other exciting matter in it, droppings (No. 10,) or, for want of it, dung (No. 5,) peat (No. 1,) and leaf-mould (No. 4,) in equal quantities; and if it be too adhesive, take half a part of sand to make it more pervious to water, or at the most a whole part. Mix these well together. It will suit everything a little; and if the plant does not do all you wish, you can at least grow it well enough to get cuttings from, and try them in lighter, poorer, or richer composts; but as we know camellias, geraniums, heaths, and succulents will grow in it,—and these are very much opposed in their natures,—it is fair to presume that any plant will grow in it enough to answer the temporary purpose of saving it to grow others from. Keep all shelves free from wet and dirt; have grooves cut along the middle of them for the water to run along, instead of dripping off along the edges, and provide for the drip at the end, so that it does not make any mess, or dirt, or litter, at the part it runs down.

Provide, if possible, the means of shading the greenhouse in any hot or bright weather, as, in the spring, when the azaleas, hoveas, and many other fine plants are in bloom, a few hours' sunshine would shorten their duration some days. A canvass roller-blind outside is very easily contrived; or a thinner blind of calico, or some such material, inside, would have as good an effect, and be somewhat lighter. But shade from excessive heat of the sun will make several week's difference in the lasting of the blooms. It must, however, be recollected, that, as whatever excludes the light in any part of it is an evil,—and, therefore, shading a choice of evils,—the blind must not be down an hour more than necessary.

When the bloom of a plant is over, you have to make up your mind whether you intend it to seed or not. If not, pick off all the remains of flowers, that the pods may not swell; for the seeding of any plant stops, in a great measure, the growth. If it be past the middle of May, you may turn a plant out in a sheltered part of the garden, for want of better accommodation; but if you can give plenty of air in the green-house and shade from the extreme heat of the sun, plants may as well complete their

growth in the house as not; for it is not desirable to expose them too much, nor do the lovers of plants like to see the green-house empty.

As camellias and azaleas, cactuses, epiphyllums,and many other subjects are turned out to harden their growth and get the benefit of air in summer, the green-house may be supplied with annuals. Balsams, cockscombs, clintonia, salpiglossis, rhodanthe, and other tender annuals, may be sown in a hot-bed in March or April; and, although they require particular treatment for large specimens, may be planted out in pots and grown still in the hot-bed, until the time they are wanted to supply the shelves of the greenhouse.

In August, everything ought to be cleared out, and the roof of the green-house should be well syringed; all the dirt washed from the glass, the walls, posts, shelves, and every part. Cleanliness is everything with plants; and the house should be thoroughly clean before the plants are put in for the winter. Nor is it at all a bad precaution during the period that it is empty, and before the syringing, to fumigate it well with tobacco, and afterwards with sulphur. The one will kill everything upwards, the other anything downwards. The syringing should be done with such force as to drive everything out of the corners.

When the plants are taken into the green-house, let the surface of the earth be stirred, the pots cleared from anything that they may have attained in the way of dirt, snails or vermin, or anything that will cling to the outside or in the holes at the bottom.

Let the paths and floor of a green-house be kept dry and clean: it ought to be a paved floor or a concrete, or some other impervious to wet; and provision should be made for the running off of all the water that may fall to the ground; for if the ground absorbs wet it too often engenders mildew.

Plants should never be trusted to the open air before the middle of May, nor remain out after the middle of September. All before or after this is running a considerable risk.

Grapes may be grown in a green-house, if the growth be confined to a branch for each rafter to fruit, and the shoot which is trained alongside of it for the next year's bearing. This does not materially exclude light, but any more would be injurious; and even this must not be attempted if the shelves are to be filled after the present crowded fashion, in which the plants touch each other and form a complete shade for the backs of the whole. The Sweetwater and Black Hamburgh are the only sorts which should be tried.

Hot-water pipes are the best means of warming a green-house in winter-time, but better avoid lighting a fire as long as possible. Mats hung up in front are a great protection to the plants, and that is always the coolest part of the house; [shutters are still better;] but when the glass is down to thirty-five, there may always be expected a frost in the night, or at least it should be provided against. The man who looks after the fires should be on the alert, and the mats in front should always be hung up in doubtful weather, because it is little trouble, and does no harm to the plants.

THE WHITE BELLEFLEUR APPLE.

BY A. H. ERNST, CINCINNATI, OHIO.

Dear Sir—Pomological investigation seems just now to be an absorbing subject with horticulturists. With a view to throw in my mite, and aid in removing some of the stumbling blocks. Permit me to give you the result of my inquiry concerning the apple which has here been cultivated as the *Detroit*, and which is extensively known as the White Bellefleur. My attention was aroused to this fruit more than twenty years since. I traced its supposed introduction here to be from *Detroit*, and hence

its name. I found it afterwards, however, brought to our market from various other parts of the country, under as many various names. I sent specimens of it to the Massachusetts Hort. Society and the Pa. Society, and also to several eminent pomologists, yourself among the rest; no one of whom recognized it, except Mr. T. Hancock, of Burlington, New-Jersey. He suggested its identity with his *Jersey Greening*, (not the Jersey Greening of Coxe.) In the 2d vol., page 545 of the Horticulturist, Prof. Kirtland, in his Pomological Notes, asks the question,—"Is not this synonymous with *Woolman's Long* or *Ortley Pippin*?" He does not inform us whether the question is suggested by his own observation or that of some other person.

Having received grafts from Mr. Hancock some years before, of what he cultivates as the *Jersey Greening*, I was led to a careful comparison of the wood, growth and habit of the tree, when it surprised me to observe the striking resemblance. This I had also observed on former occasions with the *Ortley Pippin;* grafts of which I had received from the late R. Manning. I watched, therefore, with considerable anxiety the maturity of their first fruiting the past summer, to solve the mystery hanging over the nomenclature of this excellent fruit. The result is most satisfactory in removing every doubt, and proving our *Detroit* to be synonymous with the *Ortley Pippin* of *Lindley's Guide*, and *Manning's Book of Fruits*, which I presume is the *Woolman's Long* of *Thompson*, as described in your *Fruits and Fruit Trees of America.* The fact that it was sent from New-Jersey to England, and there pronounced as identical with *Woolman's Long*, would appear to fix it as an European variety, and to remove all doubt of its origin and introduction among us. Still, Mr. Floy, who first sent the Ortley to England, declares that it is an American variety,* which originated in New-Jersey; and Mr. Thompson has not offered us any means of knowing that "Woolman's Long," like "Vicar of Winkfield," may not be a new English name, by which this fruit has been rechristened in bringing it into British gardens. More than all, as this apple is cultivated to an immense extent in the western states as the Detroit, or White Bellefleur, and as this latter name has become a standard one in this country, through Downing's *Fruits and Fruit Trees of America*, I feel justified in assuming the White Bellefleur to be the standard name.

I have, in describing this apple, confined myself strictly to its western character, which, I am aware, differs somewhat from your descriptions in point of colour, size and texture. To the first I am readily reconciled, from having observed, when on a visit to the north last summer, the singular and remarkable fact, that some fruits which, with us, are very rarely coloured at all, are there always very highly coloured. The second, I presume to be the natural consequence of our soil and climate.

The growth of the young tree is upright, long and slender; from the latter cause, often bending to one side, under the weight of the foliage. Wood smooth, and yellowish brown, with the ends of the long slender shoots inclined to mildew.

DESCRIPTION.

Size.—Large.

Form.—Generally conical, slightly flattened at the base; surface mostly even, but not uniformly so; much disposed to vary in form and evenness of surface.

Calyx.—Small, partly closed, and in a shallow basin.

* See late edition of *Floy's Lindley*, 1846.

Stem.—Long and slender, planted in a deep, narrow cavity.

Colour.—Light yellow, numerously covered with smutty blotches, which readily yield to the brush,—with occasionally a scarlet blush on the sunny side.

Skin.—Thin, smooth and oily to the touch.

Flesh.—Yellowish white, tender, and abounding in sprightly juice.

Flavor.—Slightly sub-acid, blended with rich, saccharine, fine flavored juice.

Core.—Remarkably large and open; seeds small, pointed, and light brown.

Maturity.—October to March.

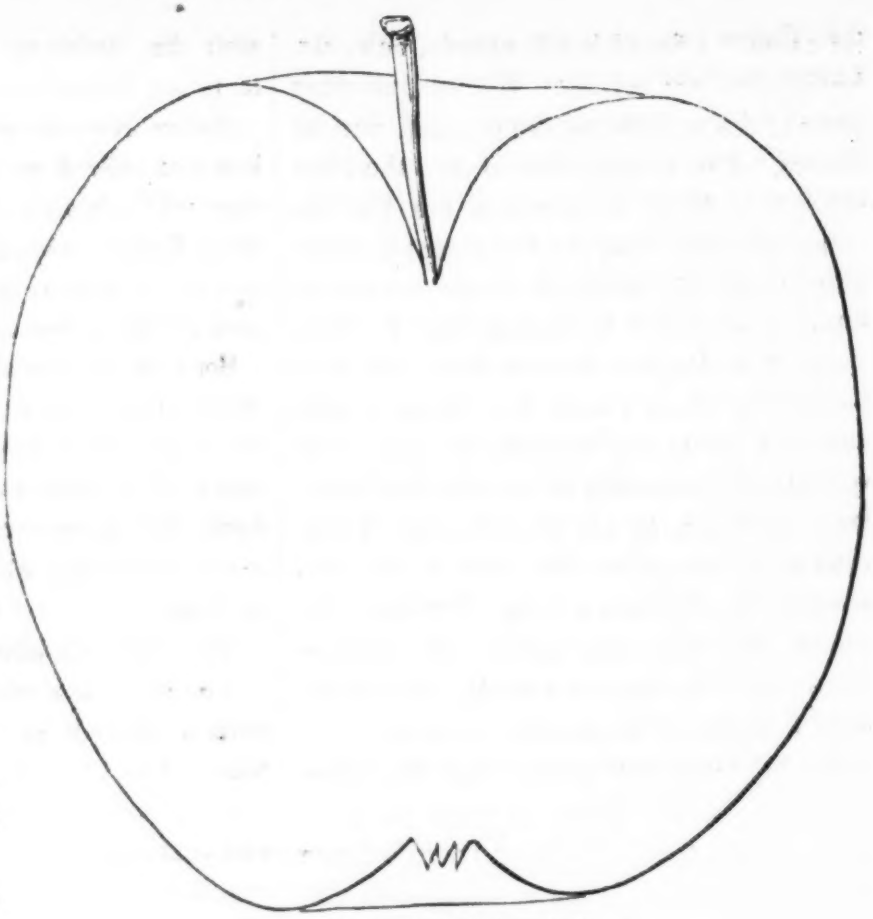

Fig. 70.—*White Bellefleur Apple.*

SYNONYMS.

White Bellflower, Green Bellflower, Ohio Favorite, Detroit, White Detroit, Hollow Core Pippin, Greasy Pippin, Melting Pippin, Crane's Pippin, Warren Pippin, White Pippin, Yellow Pippin, Golden Pippin, Woodward's Pippin, } of the western states.

Woolman's Long, Ortley Pippin, Ortley Apple, Van Dyne, } of English works.

Jersey Greening, of some.

Yours sincerely, A. H. Ernst.

Cincinnati, O., December, 1848.

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In common with all pomologists, we owe Mr. Ernst our thanks for clearing up the hitherto vague state of our information regarding this fruit. The date of his communication shows that it was written several months ago. Having at that time some doubts of the identity of the White Bellefleur, or Detroit, with the Woolman's Long, or Ortley, we asked permission to allow the communication to lie on our table till we could satisfy ourselves regarding it.

The Ortley, or Woolman's Long, (both of which have proved identical here, and also, we believe, with Mr. Manning,) were better known to us than the White Bellefleur, or Detroit. But since we first received Mr. Ernst's communication, we have compared all these fruits together, and also the leaves, wood, and habits of growth of the trees, as received from various western sources, under the names White Bellefleur, Detroit, etc., and find them all one and the same variety.

Now, as under the name of Ortley, or Woolman's Long, this fruit is scarcely known in this country, except in the collection of a few amateurs, while as the White Bellefleur (or Bellflower,) thousands of the trees are grown in orchards all over the western and northwestern portions of

the Union, we entirely agree with Mr. Ernst in thinking, that White Bellefleur should be the standard name; and this for the sufficient reason, that it is easier for the few to adopt a popular and widely established name than for the many to relinquish it for one which is to them entirely new. It is on this ground that we adopted the title of Bartlett for the Williams' Bon Chretien pear, in our work on Fruits; and although many pomologists do not agree with us, and always write of it as William's Bon Chretien, yet from one end of the country to the other, this fruit is and will always be known as the Bartlett. Of course, this rule only applies to the nomenclature of fruits that are already very widely known by a popular name; for in all other cases, we would maintain as rigidly as possible the uniform and original standard name.

As we are not able to find Woolman's Long in any European work on fruit, except the Catalogue of the London Horticultural Society, we are still inclined to think this an American fruit, first sent to England by Mr. Floy.

Both as an orchard and table fruit, the White Bellefleur is more generally esteemed at the west than here,—bearing large crops of excellent fruit. Mr. Ernst informs us that fine specimens were exhibited to the Cincinnati Society this year, as late as June.

We have already pointed out, (see vol. iii., p. 391,) that the *Cumberland Spice* is quite a different fruit from the White Bellefleur. Ed.

DESIGN AND DESCRIPTION OF AN ENGLISH COTTAGE.

BY GERVASE WHEELER, ARCHITECT, HARTFORD, CT.

[SEE FRONTISPIECE.]

In this country, and especially in some districts, wood must for many years be used as the material for building. It is this want which has, in fact, given birth to a style almost peculiar to this country; for nowhere in Europe will be found (excepting in a few solitary instances in the south of England, and in some parts of the neighborhood of Nice,) the class of house that abounds more especially in the New-England states. Thus, whilst this material seems in many instances to be imperatively demanded, it becomes the duty of the architect to meet the exigencies of the case, and, like a true artist, endeavor to extract beauty from what is given him;—beauty which shall be the result, as all architectural beauty must be, of *fitness* and harmony.

Attempts to imitate effect, that can be only produced in stone or other material, in wood, whilst for a short time they may please the vulgar eye, cannot fail at no very distant period to be as unsparingly condemned as they deserve; and were there not some consolation in the thought, that the paltry imitations and ridiculous pretences that disfigure too many of our beautiful sites, cannot possibly last long enough in their frailty to outlive the attack that the increase of a purer taste and riper experience are preparing for them, some comment might seem necessary, upon the entire unfitness for the material and failure

necessary in the result, many recently erected wooden structures exhibit.

The material is itself a beautiful and a manageable one; and there are many examples in Europe, to show how durable and how pleasing may be the manner in which a true artist can use it.

There are time honored buildings in England, and in Flanders, that have stood and seem likely to stand for centuries; and, though from local causes, these are not examples that with benefit I would advocate introducing here, still they show what may be done in the right spirit with the material in any place, and are valuable as lessons to the architect, who may learn from them how the mighty men of old conquered *their* difficulties, and may gain encouragement how to overcome *his*.

It seems difficult to assign any particular style which, in this country, affords the best medium for the use of wood, because the character of the building must depend so much upon the scenery, the requirements of the builder, and upon local causes.

Where a high pitched roof is admissible, (and I believe there are very few situations where it is not,) the style that the accompanying plates exhibit will be found, I think, suitable.

This is essentially *real*. The character that it possesses is given it by its simplicity and fitness of construction; and no attempt is made with such board finery, to dress up and make "Gothic" what would otherwise be a very plain house.

The building is slightly modified from one that the writer has executed at Brunswick in Maine, at a cost not exceeding twenty-eight hundred dollars, whilst the size and arrangement of the rooms, the roomy hall, and the picturesque exterior point it out as the residence of a gentleman; and simple, and inexpensive as it is, it contains really more of the requirements that a house should possess, than many that have cost twice the money.

The method of building is somewhat peculiar. It is *framed*, and on the front the construction shows, and gives additional richness and character to the composition. Across the frame are horizontal braces, at equal distances apart, and on these are nailed, on the *inside*, horizontal boarding, and on the outside diagonal boarding, whilst the sheathing of the exterior is composed of perpendicular plank, confined with *battens* two inches and a half thick, which are made with a broad shoulder, and nailed to the horizontal braces,—confining the planks, but leaving spaces for shrinking or swelling, and thus preventing the necessity of *a single nail being driven through the planks*, and thus rendering the *splitting* of the planks impossible.

The outside is painted with a mixture of paint and fine smooth sand, laid on with a wire brush; a method of painting the writer has had an opportunity of personally testing during a period of twelve years, and has found it to be the most durable and economical covering for out buildings that he has ever tried.

The windows, doors, and ornamental gables are simple and real. The windows being made of solid frames, four inches by five, and champered, and the doors framed and champered.

The inside finish is of the same *real* and simple character. In the hall the joists, carrying the floor above, are permitted to show; and as they are made in yellow pine, planed, and the edges champered and stopped,—the plastering between being coloured a rich blue, and the joists, cornice, and other wood work being oiled and varnished, a rich and substantial effect is obtained, and at a very moderate cost.

The exigencies of the proprietor required the two rooms left of the hall to be divided by sliding doors; otherwise, the writer wished to have had them as one large room. But the severity of the winters' cold required an arrangement, by which the space to be constantly warmed could be reduced.

The plan of this house affords a roomy entrance hall, so large as to serve for a room, an enclosed porch, produced by a simple arrangement, which gives ample recesses for hat stand and coat stand, on either side of the entrance door, a handsome staircase, enclosed, and opening into the hall, whilst an outer door leads on to a terrace, communicating with the garden.

The rooms are large and conveniently arranged, and the chambers over correspond in size. In the roof is a space so roomy and well ventilated, as to admit of being divided into servant's or occasional sleeping rooms, with great ease.

The chimneys are inside the house; and every precaution has been taken by the arrangement of doors, &c., to make the inside as warm as possible.

There are other styles that admit of the use of wood with great propriety and advantage.

A modification of the modern Italian is very suitable; and with the bold projections of Campanile and bracketted roofs, may, in this material, be made very effective, particularly as the battens may be used in a manner that will give great character and richness to the exterior.

In fact, so long as the true genius of the material is not contradicted, the characteristics of almost any style, excepting the purely classic, may be preserved; but it is from not discriminating between what the style requires and what the material permits, that the incongruous attempts and cheap imitations, so constantly seen, are caused.

Where everything is real, and the eye is not deceived, however simple and inexpensive the work may be, the composition cannot but please; but richness of ornament, at the expense of architectural truth, is a deformity, and must soon disgust.

GERVASE WHEELER,
Architect.

Hartford, Conn., April 2, 1849.

KNEVETT'S GIANT RASPBERRY.

THE great desideratum in raspberry culture, is to obtain a large fruited variety, of good quality, which shall be perfectly hardy in the middle and eastern states.

The Antwerps, the Fastolff, and even the Franconia, are very liable to have their canes or current year's shoots, upon which we depend for fruit the next season, destroyed by a winter of little more than usual severity; especially if the temperature varies, within 24 hours, from severe frost to warm sunshine, while the ground is uncovered with snow.

To guard against this destruction of the canes, it is the practice of careful cultivators to bend them down in November, and cover them with a couple of inches of earth; this insures the entire safety of the bearing wood, and consequently a full crop. But as it involves some care and attention, it is very desirable to find some variety of fine quality, which does not require any such care.

Fig. 71.—*Knevett's Giant Raspberry.*

We are not able to pronounce fully that *Knevett's Giant* is such a variety, because we are not aware of its having been tested in various parts of the country. But we can state that it has proved far more hardy in our own garden than either the Red or White Antwerp, the Fastolff, or the Franconia.

All these varieties, where they were left uncovered, were cut down to the ground last winter, which was one of unusual severity. On the other hand, Knevett's Giant does not appear to have been in the least affected by the cold, and is now bearing a fine crop of excellent fruit, from a cluster of which our fig., 71, is taken.

We received this variety a few years ago from our friend, Col. WILDER, of Boston, who had it, we believe, from Knevett, the originator, an extensive English cultivator, who is a market grower of small fruits.

We have already described it in our work on Fruits, and will only now add, that it is a stronger grower than either of the old sorts, that it appears to be very hardy and of easy culture. The fruit is of the largest size, and obtuse conical; that is, its form is rounder, and flatter, and not so pointed as that of the Red Antwerp, or the Franconia. It is equal to either of these in point of flavor. In texture, it is a *firm* fruit, like the Red Antwerp, and is therefore better adapted for market cultivation than the Fastolff. Altogether, we think it worthy of more extensive trial in the northern states, and more especially with reference to its hardiness.

HOW TO MAKE STRAWBERRY BEDS.

BY AN OLD DIGGER.

As I presume a large part of your readers prefer practice to theory, perhaps some of them, about to plant strawberry beds, may take an interest in the following hints, though they are neither novel nor original.

I have seen a great deal written about the sexual character of the strawberry, but not half enough about plain and straightforward ways of cultivating it.

Now I must be permitted to say that I have cultivated for years the Early Scarlet, Hudson, and Hovey's Seedling,—three unexceptionable sorts; the first peculiarly valuable for early maturity, the second for preserving, and the third for large size and good quality; and I have paid no attention whatever to staminate or pistillate plants. All I have cared for, was to *get the soil in the right state*, and let the blossoms and berries take care of themselves. I have had the satisfaction of gathering very large crops of first rate fruit, while some of my neighbors, who have studied the nature of the blossoms, and thought too little of the soil, have had very sorry crops. Not that I mean to say that there is not something in this matter of the difference in the blossoms; but that I have found it of little or no importance to intermix them in any given proportions in the same bed. All that I do, is to cultivate a bed of "staminates," like the Virginia, or the Early Scarlet, in the same part of my garden as my Hoveys and Hudsons, and let them take the whole matter of fertilization into their own hands.

Now it seems to me that the point most difficult to hit, is that of manuring the soil well for the strawberry. If you use stable manure, in the ordinary way, you are certain to fill your soil with weeds, to such an extent that you give yourself a deal of needless trouble in keeping the weeds down; and if, as is not unlikely, you use it *fresh*, you will be likely to burn up your young plants, if the season is dry.

Two points must be understood, to grow the best strawberries: 1st, that the soil must be deep; and 2d, that it must be rich. If you look at the leaves of a strawberry, and, because they are not very large, presume that the roots will extend but little depth, you are greatly mistaken. I have seen the roots of strawberries extend five feet down in a rich deep soil; and those plants bore a crop of fruit five times as large, and twice as handsome and good, as the common product of a soil only one foot deep.

And this reminds me of a capital instance of *strawberry delusion*, which most of your readers doubtless know something about, but which many even yet do not, perhaps, fully understand. I mean the history of the "Washington Alpine Strawberry," which Mr. Stoddart, of western New-York, advertised and sold a great many dollars' worth of, some four or five years ago. Mr. Stoddart, I believe, was quite honest in the transaction; and yet the whole public were completely deluded by the "Washington Alpine," which was nothing but the old Alpine or monthly strawberry. The long and short of the matter was, that Mr. Stoddart had a corner of his garden which was *made ground*,—a rich deep moist soil, (I think it had been

an old bog, or bit of alluvial, afterwards filled up,) not less than 8 or 10 feet deep. Mr. Stoddart had raised some seedling Alpines, (which, so far as I know, always come the same from the seed;) he had by lucky chance planted them in this corner of his garden, where the soil was so unusually rich and deep. There they grew so finely, and bore such enormous crops, that his neighbors could scarcely credit their senses. The story of the miraculous crop got into the papers. People came to see with their own eyes. In short, they bought and carried away the "Washington Alpines," at extravagant prices, with the full conviction that "seeing is believing," and that such strawberries were never before grown, gazed on or tasted. Well, great was their surprise to find, on planting and cultivating the "Washington Alpines," that there was nothing new or wonderful about them; and that, in fact, they all dwindled down to the old fashioned Alpine strawberry. Mr. Stoddart, naturally enough, now has as many hard names bestowed on him for the fancied deception as he had before had hard dollars for really great crops. And yet, Mr. Stoddart sold his plants in good faith, and was probably as much deluded as the buyers. The whole secret of his unheard of crops, and the large size of his fruit, lay in the depth and richness of his soil; and as none of his customers had, like him, a rich ten feet mould to grow giants in, they had no "Washington Alpines."

The "moral" your readers are to draw out of this digression is, that they cannot well make their soil too deep for the strawberry. Perhaps they cannot afford to make it three feet deep, which is the right depth for an extra fine crop; but, at all events, they can make it two feet deep. And now a word as to manuring it.

It is all very well to talk about composts and "well rotted manure." The real truth is, that in our careless country, not one gardener in an hundred has such things *ready for use* at the moment he wants to prepare his strawberry patch. What people have at hand, from one end of the country to the other, is fresh stable or barn-yard manure; and the question is, how to use that to the best advantage.

The true way to do this, is to throw out the soil where your beds are to be made two feet deep. Fill up the bottom eight inches or a foot deep with fresh stable manure, mixed with the litter, treading it down firmly. Then cover this with two-thirds of the soil thrown out, rejecting the worst part of it. This will raise the bed four inches above the surface; and as it will settle about four inches, it will be about level after it is settled.

This is all the preparation which I give my soil, and it is all that any soil of fair quality needs; only that I would much prefer to have it three feet deep than two feet, and to have sixteen inches of stable manure and litter at the bottom than eight, though the latter brings heavy crops in a good soil.

You may put out your plants in August or April. The only difference is, that if planted in August, you may lose half of them by the heat and drouth, unless it is a rainy season; while in April, you are certain not to lose a single plant, unless it is unsound when you transplant it.

To my mind, there is no way of growing strawberries so complete as in beds three and a half feet wide, with three rows in each,—the plants in the rows kept clipped of their runners, and the ground between the rows nicely covered with straw all the year round. The largest and finest fruit is obtained in this way, and the beds them-

selves will last many years; while, if they are allowed to cover the bed, you can, at the most, expect only two crops, and generally the fruit is of little or no value after the first crop.

It is very idle and useless to attempt to make a new strawberry plantation on old strawberry ground. You may add double the usual quantity of manure, but the soil has been so robbed of other needful elements, that you will fail in growing a healthy crop.

A word or two may also not be thrown away, respecting the choice of plants. Of course, you will always put out young runners, and not old plants; but something more than this is needful. You must take care to see that they are not runners from an old and worn out bed; for nothing is more certain than that, while runners from a fruitful bed will make fruitful plants, so also, runners from an old and exhausted bed will very often produce only barren plants. Nurserymen ought to attend to this; for any respectable and intelligent nurseryman should be ashamed of sending out plants from a bed which is not in a healthy and fruitful state, since his customers at a distance depend wholly upon his integrity in sending them sound and healthy plants; not such as inherit feeble constitutions from "a long line" of decrepid ancestors. Yours, &c.,

AN OLD DIGGER.

THE COMPARATIVE EARLINESS OF PEAS.

BY THOMAS MEEHAN, PHILADELPHIA.

SIR—I beg to offer you the result of an experiment, made to test the comparative earliness of several kinds of peas, and to make a few observations on them.

On the 3d of April, in the same soil and situation, and under equal circumstances, the following kinds were sowed. The time when each produced pods fit for use, is marked immediately opposite:

1.	Prince Albert,	June 10
2.	Bishop's Dwarf,	" 17
3.	*Thompson's Dwarf*,	" 17
4.	Early May,	" 21
5.	*Early June*,	" 21
6.	*Early Frame*,	" 21
7.	*Early Charlton*,	" 21
8.	Royal Dwarf Marrow,	June 25
9.	White Marrow,	" 25
10.	Black Eyed Marrow,	" 28
11.	Blue Prussian,	" 30
12.	Blue Imperial,	" 30
13.	Banksian Marrow,	July 2
14.	New Mammoth,	" 2
15.	Dwarf Sugar,	" 2

Nos. 5, 6 and 7, prove to be identical, in every respect, with the "Early May," [or Early Frame,] as also does "*Thompson's*" with Bishop's Dwarf.

It will be observed from this, that Prince Albert is seven days earlier than Bishop's Dwarf, and eleven days earlier than the Early May,—the generally received best early pea; and besides this, it is quite as productive. "Extra Early," and "Shilling's Early Grotto" bear good names for earliness and productiveness; but I have not had an opportunity of testing them myself. "Bishop's Dwarf Pea," besides being tolerably early, is an excellent pea for growing between drills of other things, or where it is desirable to have peas no higher than a foot to eighteen inches high; besides this,

they require no staking, and, considering their height, produce well. The White Marrow has a fine large pod, but is not so productive as other kinds, and too tall for general cultivation. "Blue Imperial" is preferred by many to the "Blue Prussian;" the pods being larger, and more "likely looking," in a marketable point of view. I prefer the Blue Prussian, as being more productive.

For succeeding crops, I should sow with Prince Albert, Early May, Blue Prussian, and Banksian Marrow or New Mammoth. Each one of these will come in for use immediately as each one before it is done.

Some peas are better adapted for standing the heat and drouth of our summers than others. I have noticed this particularly with the "Dwarf Sugar," which I consider a first rate pea for a late spring sowing. The pod has a very shrivelled appearance; but it produces well, and is not more than two feet high.

If you think such observations and experience of service to some of the readers of the "Horticulturist," I should have much pleasure in offering others, on other things, at some other opportunity.

THOS. MEEHAN,
Rosedale, Kingsessing, Philadelphia.

A SHORT EXPERIENCE IN RAISING STRAWBERRIES.

BY WM. S. FULLERTON, NEWBURGH, N. Y.

ONE of our neighbors—who is an enthusiastic amateur, though he is only able to devote to his garden now and then an hour, snatched from the duties of his profession,—succeeded this season in producing the most magnificent strawberries, both as regards size, abundant crop, and excellence of flavor, ever seen in this vicinity—though it abounds in good gardens. He did this, too, even allowing the plants to cover the whole bed—by which, though gaining in total product, he must necessarily have lost in the size of the berries. He has, at our request, written out his practice for our readers. We may add that his soil is a strong loam, and that he used at least four times as much manure as is usually employed in preparing strawberry beds.—ED.

DEAR SIR—I take great pleasure in answering your inquiries as to my method in cultivating strawberries.

In the spring of 1846 one of my neighbors presented me with a half dozen strawberry plants of the Hovey Seedling variety, and with these commenced my experience in that department of horticulture. I had a small piece of ground in my garden, twenty-four by twenty feet, which I designed for my bed, and I immediately set about preparing it, having in the meantime set my plants in a temporary spot for the purpose of increasing their number the first season, intending to *take a year to prepare my ground*. My manner of doing it was as follows: In the first place I gave the ground a most thorough *trenching two feet deep*, throwing the yellow loam entirely on the surface, and burying the soil, at the same time manuring *most bountifully* with good horse manure. I then let the ground lie in that condition exposed to the weather about six weeks, and then dug it over again to the same depth, mixing the whole mass *thoroughly* and again manuring it, using this time an excellent sort of *poudrette*, which I applied plentifully. The ground

remained in that condition until the month of July, when it was again *dug over* the usual depth, trenched, and planted with celery. It produced me a fine crop that fall—I having used freely of *wood ashes and salt* in its culture.

The following spring (1847) I transferred my six plants and their progeny to the bed thus prepared, setting two and three roots in a place and three feet apart each way. I had plants sufficient only for one-half of my ground. They immediately commenced growing, and by fall the ground was completely covered with fine healthy vines.

The balance of the bed I treated as follows: After taking off a crop of spring spinage, I again dug the ground over, and gave it another thorough manuring. In the month of August I obtained from Mr. Saul (of the Highland Nursery, of this place,) sufficient plants of the *Black Prince* and *Swainstone Seedling*, to finish my bed; setting the Swainstone next the Hovey's and finishing with the Black Prince. The drouth was very severe afterwards, and the plants made no runners. They all survived, however, and got sufficiently established to withstand the winter.

The following spring my strawberries soon *showed their keeping*. The plants last set out grew finely, and threw out runners which during the summer completely covered the whole ground. The other half of the bed soon became *a wonder*. I never saw such luxuriance in the growth of anything. The leaves and fruit stalks grew to an astonishing height, and I was really persuaded by some of my neighbors who were full of experience (I had none) that I had "overdone the matter," and had manured so heavily that I would get no fruit. I said but little about my experiment, often thinking, however, of the old adage of "bought wit," and the price I supposed I had paid for it. But how agreeably was I surprised after "biding my time," that my bed instead of being all vines, as was predicted, matured an enormous crop of fruit, which for quality and *size* was the admiration of all who saw or tasted them. This part of the bed was about ten by twenty feet, and I gathered from it thirty-four quarts of strawberries. Many of the berries measured four and three-quarter and some five inches in circumference.

Last spring, 1849, my whole bed came in bearing, the plants far outstripping those of my neighbors, in the rapidity of their growth and the prodigious luxuriance of the foliage. The whole bed soon became one dense mass of blossoms and leaves, delighting the eye with their rich luxuriance, and promising a fine return for the care bestowed upon them. When the fruit ripened it was really no common spectacle. Standing by the side of the bed, only now and then a berry was visible, so rank was the foliage. My method of showing the uninitiated its hidden beauties, was by taking a smooth pole, sufficiently long to reach across the bed, with which I gently parted the vines, and pressed the foliage down on one side. An exclamation of wonder and admiration was the tribute always paid to its suddenly revealed treasures. The quantity of fruit thus exposed was truly incredible; I never before saw anything to compare with it. I made an attempt to keep an exact account of the amount which the bed yielded this year, but frequent absence from home prevented it. My record, however, shows nearly eighty quarts. They continued bearing for three weeks, during which time, as a reward for my labor, I had the satisfaction of gathering the finest flavored strawberries in the greatest abundance, not merely a few, but *quarts* of which were from three to five inches in circumference.

As to my manner of cultivation, (allowing the plants to cover the whole surface of the bed) it has its objections as well as its advantages. Hovey's Seedling will ripen perfectly and retain their flavor when thus massed. The Black Prince suffers somewhat in flavor, and in the rich dark coloring of its fruit, but it ripens well. The Swainstone was almost lost in the crowd. The Black Prince on the one side, and the Hovey Seedling on the other—both more vigorous growers—fairly overrun the more modest neighbors. The Swainstone, however, I think far the most delicious fruit for eating out of hand, and it would undoubtedly do better cultivated in hills, and out of the reach of other vines.

But then massing has some invaluable advantages. After the first crop in the spring, the weeds will give no trouble. The fruit stalks stand nearly upright, keeping the fruit from the earth, yielding it perfectly clean, without the labor of spreading straw or grass on the ground to keep it so.

I was often asked how the fruit could be gathered without injury to the vines, for there would appear to be "no rest for the sole of the foot." This, however, was not the case. By carefully parting the vines with the hands, at the first picking, there was no difficulty in finding room for the feet, without doing the least injury, and I always after that follow in my first tracks. Parting the vines in picking the fruit, with the aid of my pole (already spoken of,) exposed the fruit to the sun and brought it to maturity.

Upon the whole, I feel richly rewarded for all my painstaking in thoroughly preparing the soil. Although there are very many within my acquaintance who complain that they fail in raising strawberries, yet the fault lies with themselves. A good crop here is always the result of good cultivation. Let them dig deeply and manure heavily, and so surely as the sun shines and the rain falls, they will be convinced of the immense advantage of such previous preparation, when they gather the superb crops which are the result. F.

Newburgh, July, 1849.

THE SUMMER TREATMENT OF GREEN-HOUSE PLANTS.

BY B. LEUCHARS, NEW-HAVEN, CT.

In this country, the office of a gardener, if he properly performs the duties thereof, is no sinecure. Some days we have the sun of the tropics shining upon us with a burning brightness, parching and paralyzing every green herb, and some nights we have the cold chilly atmosphere of the poles, bringing along with it the aqueous vapours of these ice-bound regions, cooled down almost to the freezing point, and depositing them upon the weltered and seared forms of dying vegetation. There is, however, a comparatively trifling diminution of terrestrial heat in proportion to that lost by the lower stratum of air; and thus, the plants upon the earth's surface, are placed much in the same position as a man would be, with his feet in an oven and his head in an ice-house. If, perchance, a dull and cloudy day should intervene, the organism of delicate plants become relaxed, the tissue of the leaves is softened, and thus they are rendered more susceptible of the scorching rays of the next day's sun. These peculiarities in the physical condition of this portion of the world, render the cultivation of many plants somewhat difficult, and it is easy enough to perceive that these circum-

stances afford a good many gardeners a very self-satisfying apology for downright indolence and neglect.

My object in writing this paper, is to say something on the summer culture of green-house plants—an expression which has as different meanings as a horse chestnut and a chestnut horse. The majority of gardeners explain it by turning all and every moveable plant, (wholesale and retail,) out of the green-house, and huddled together sans cermonie, under trees, hedges, back walls, and out-of-the-way corners; the affair is finished by putting an embargo upon the green-house door, the place is forthwith proscribed; like a sleigh, it is laid away until winter, when it is again stuffed full of its former occupants. Some people have associated such a *tropical* idea with the sight of a green-house, that they positively shrink from entering it on a warm day; and this idea is fostered by the custom of turning out every object that would induce them to enter it, and all under the absurd notion that nothing will thrive in it during the summer months. If gardeners would study for a moment the effects of this method, they would soon see the propriety of abandoning it for a better. Nothing can be more injurious to themselves or to their profession. If we would create in the minds of our employers a lively interest for the subjects of our labor, we ought to render those subjects as interesting as possible. We must give a visible polish to the productions of our art. The flower garden may be parched with drouth, but the green-house ought always to be in a blaze of beauty. Show them, that after all, it is really comfortable and pleasant to walk into the green-house or conservatory, and view the floral beauties of different climes, and breathe at the same time a cool and agreeable atmosphere.

But can this be done? Certainly. Nothing is more easy. To effect it successfully, however, the gardener must not only have a "weather eye," but also a philosophical one, so as to discern the time, and the seasons, the transitions of nature, the nature of the plants, and the atmosphere we place them in, as well as the quality of the soil and of the water with which we supply them. In short, we must do things in the proper manner and at the proper time, in close imitation of the teachings of nature. We ought to have that confidence in our operations which is learned only by close practice and strict observation, and without which plant-growing is both a profitless and a pleasureless business, unsatisfactory to our employers and discreditable to ourselves.

I have lately visited a considerable number of places where gardeners are kept, and almost without one single exception, their green-houses were empty; perhaps a few old and immoveable and unsightly subjects were standing here and there, covered with dead and dying foliage; making the wretched appearance of the house still more wretched, and its confusion worse confounded. What would an English gentleman think of the gardener who kept his plant structures after such a fashion? It would not be tolerated a single day. Nor is there any reason why it should be tolerated here, while plenty of good gardeners may be had by sending for them. It is a well known fact, that with some honorable exceptions, this country is supplied with the scum and refuse of foreign gardeners, the very sweepings of the craft. Impositions and deceptions, quacks, pretenders and shams; men who hardly know a cabbage from a cucumber, or a bean from a beech tree. Yet they are employed as "gardeners," and many of them regarded as the standard of gardening ability.

It is impossible the time should be far

distant, when really talented and skilful gardeners will be more appreciated by the employers in this country than they are at present. And that the gold getting mania which at present prevails, will give place to inquiries and enjoyments more refining and intellectual in their nature, and much more calculated to give dignity and nobility to this great *people*, than that utilitarian spirit which finds its greatest happiness in the sordid accumulation of dollars and cents. The United States have their Horticultural Societies and Pomological Conventions. Some of them on a grand scale. Yes! grander than any other society in the world, and nobly supported too. But where is its Botanical, its Horticultural, or its Experimental Garden? It has none. Were I to write to the gardeners of London, or of Edinburgh, that this great people had no national garden, they would not believe me. Yet it is a stubborn fact. Some console themselves with the reflection that the time is not yet come to make such a movement, but many others are keenly alive to the desirability of such a grand object. Thousands and tens of thousands of dollars are annually expended upon playhouses and places of public amusement, immeasurably less elevating, instructing, or refining in their tendency than a national or metropolitan garden. Let us hope the leading men of this broad country will ere long take this great national want into their consideration, and give the people a Botanical and a Horticultural Garden, with splendid structures wherein the natural productions of other climes may be accumulated,—a garden worthy of this rich and lovely land—and worthy of the enterprising people who possess it.

The whole mystery in the management of green-house plants in summer is in giving them shade and moisture. The shade ought to be elevated above the glass at least 20 inches or 2 feet. This is of great importance, as it admits a free circulation of cool air between the blind and the glass. The atmosphere should be kept cool and moist by evaporation, and this is easily done by syringing water on the floor, on the shelves, on the flues or pipes, among the pots, and on every available surface. By these means I have reduced the temperature of the house 15 degrees in a few minutes, and rendering the atmosphere agreeably temperate during the hottest days we have had lately, than which, none could be more trying, yet the plants are luxuriating in perfect health and blooming abundantly.

An evil, and a great one, consists in bad soil, and bad drainage. I have been told there is no use for drainage, for the plants require so much water here, and for the same reason fine soil was rammed about their roots, as firm as that about a gate post. Could we have a better argument in favor of free drainage and rough soil. You can water frequently; the water percolates quickly through the soil, the air follows it and keeps the moisture suspended in the mass. The most of summer flowering plants delight in such treatment. It is most essential in matters of artificial culture to take examples from nature. In what conditions do we find the most luxuriant tropical vegetation? In places moist and shaded, where the plants spring up annually among the decayed herbage of the previous season, where the decomposing mass is free and porous, allowing the accumulated moisture to pass off in the season of growth. How is it possible for the air to circulate, if the pores of the soil are blocked up with water, or where the ball is as hard as a lump of clay. Besides, the water itself will not circulate through a ball of earth, without a

free circulation of air. Therefore I would advise every one who has the management of plants to give these matters the consideration which they deserve.

Another point requiring special attention is cleanliness. All decaying leaves and flowers should be picked off as they appear. If the falling petals of decaying flowers are allowed to lay on the leaves of other plants they soon communicate decomposition to the parts, and the leaf quickly decays, however healthy it may be. The moment insects or vermin of any kind appear, they should be cleared out directly or have notice to quit. If the green fly makes its appearance on any plant, fumigate slightly with tobacco; let this be done on the principle of "little and often." It will generally be found necessary about twice a week. Syringe the plants clear of the bodies of the aphis the following morning with clear water. There is no reasonable excuse for having the plants in a house infested with insects, when these pests themselves are so easily destroyed.

The last point to which I will at present refer, is the folly of throwing the house open in every available part, thereby exposing the plants to dry and parching winds. Nothing is more hurtful to plants in bloom, than subjecting them to currents of dry air, especially heated as it is during the hot hours of noon. The flowers fade in a few hours; the vital action of the leaves is paralyzed, and moreover, the moisture that rises in the atmosphere by evaporation is carried off almost as soon as it is generated. The better way is to keep the house pretty close during the day and exposing them at night, by this kind of treatment the plants will grow vigorously and flower abundantly.

I shall take an early opportunity of specifying some plants most suitable for the summer adornment of green-houses and conservatories, and my system of managing them. Meantime I would advise gardeners to bestir themselves, or they will be left behind, for gardening is making rapid progress in this country. Above all, do not neglect plants at this season, perfection in culture as in everything else, is made up of trifles; even if one part of a system be properly carried out in practice, if others are omitted, the effect will seldom prove satisfactory. There must be strict attention and persevering energy, carried on systematically throughout, in order to reach even mediocrity in the cultivation of plants.

R. B. Leuchars,
Gardener to Professor Silliman, jr.
New-Haven, Conn., July, 1849.

FOREIGN NOTICES.

English Shows.—The agricultural show at Southampton was a remarkable occasion. I met a number of Americans on the ground, and was told that there were several others looking for me; but it was exceedingly difficult to find one, unless by mere accident. There were a great many farmers' wives and daughters, as well as a great many of the noblesse, in the yards, inspecting the implements and cattle, with catalogues in their hands, and showing the remarkable points of the animals, with as much skill and sagacity as if they had been experienced breeders of live stock; some of them are, and also competitors for the premiums. One of the largest exhibitors of farming implements, was a woman who had succeeded to her deceased husband's concerns, and manages a large establishment with much success.

The English women and ladies, to their praise be it spoken, while they are as far from anything indelicate as any persons I have seen, have no sickly appreciation of modesty, and do not die at once at the sight either of a cow or a bull. The

show occupied four days. On Tuesday, was the trial of implements; on Wednesday, was the exhibition of implements and machinery; on Thursday, the exhibition of cattle and implements; and on Friday, the public sale. Half a crown was required for admission to the yards, from Wednesday to Thursday noon, and after that a shilling; and the sum received for admission, during those days, was £3,000, or $15,000.

I am sorry to tell S—— that there were no dogs shown for exhibition or premium, though many of the English are as proud of their dog as of their children. They are not considered as agricultural stock, though they are sometimes used in carts for draught. Two things I have wished very much to do since I have been in England; one was to be able to send S—— a little pony and pony carriage, of which I have seen some of the prettiest establishments that can be imagined, fitted to carry two people; and, indeed, a great many of the nobility have them in their places in the country, and are often seen driving them in Hyde Park; another, is to send E—— an Alderney cow, looking like a Gazelle, giving the richest cream, and making eight or ten pounds of the most delicious butter a week, and just fit to make a pet of round the house. I should like to add to this a donkey for N—— & G——; for at Hyde Park corner, and at all the principal places of rural resort in the neighborhood of London, you find half a dozen, and sometimes twenty or thirty of these animals, standing with side-saddles and chairs on their backs, for ladies and children to ride upon,—a mile for three pence, and with perfect safety. Their knitting-needle gait is always amusing, and sometimes swift. * * * *

The incomes of many noblemen and gentlemen here are indeed enormous. Earl —— is stated to have an annual income of upwards of £100,000 sterling. The Duke of —— has actually spent more than £40,000 in draining and irrigating his property; so you may infer from that, what possibly may be his possessions. That expenditure is not even felt by him. And Earl —— is estimated at least at £150,000 sterling per year. The accumulation of property here is in some cases amazing, and entirely beyond my arithmetic. Now let me state some other facts. Earl —— has at least 80 house servants. The Duke of —— has 80 horses in his stables—say nothing of his farm horses, 40 of which are hunters, besides a very large number of race horses at other stables. Lord Yarborough has an indefinite number of hunters, &c.; and what amused me very much, was a pack of fox-hounds of forty couples. Lord Worsley, his son, kindly wished me to stay till Saturday, to go out on a fox-chase. Good heavens, only think of that. What was to become of my wive's old husband,—mounted on a fleet hunter, leaping hedge and ditch, with a pack of yelping hounds at his heels,—the huntsman's horn making the woods ring again, after a poor trembling fox, and bringing home the tail in his hat in triumph; that is, if his neck were not broken at the first leap. The very idea electrified me, and my blood still boils at the thought. It was the custom at this place for his lordship (and his guests were always invited to accompany him,) to visit the stables where the hunting and riding horses were kept, at nine in the evening, precisely. They were reached by a covered passageway from the house. The stables presented all the neatness of a house parlor; and the grooms, more than a dozen in number, were all drawn up in line, to receive the company. His lordship examined every stall, and looked at every horse. This regulation was certainly conducive to the faithful management of this department of the household; and it had another indirect advantage of taking the gentlemen away from the table, where, at that hour, they had sat long enough.

The Duke of Portland has drained, and by turning the course of a river, now irrigates at his pleasure between three and four hundred acres of land, covered, by this means. with the richest vegetation, and yielding three crops per year. Lord Yarborough has more than 60,000 acres of land in his plantation. He has one hundred and fifty tenant farmers; he has six hundred tenants in all; and you can ride upon his land in a direct line thirty miles,—so his steward told me. What an immense property! He and his father have *planted more than thirteen millions of trees* of various descriptions. One of his tenants told me, that in one year he (the tenant,) grew eighteen thousand bushels of wheat; and I saw a great many stacks of grain, which were estimated to contain one hundred quarters of grain,—that is, 800 bushels. *Colman's European Life and Manners.*

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The Swan.—The swan is, beyond all question, the bird to place, as a finishing stroke of art, on the smooth lake which expands before our mansions. It is perfectly needless, however delightful, to quote Milton and others, lauding the arched neck, the white wings, the oary feet, and so on. Its superb beauty is undeniable and acknowledged; and, to borrow an apt metaphor, we do not wish in these essays to thresh straw that has been thrice threshed before, to repeat how lovely the swan is on the silver lake, floating "double swan and shadow;" for we might thus run scissors in hand, through the whole *corpus poetarum*. Our object, in short, is simply to point out the best mode of managing them and keeping them.

Any one who lives on the banks of a moderately sized stream, and has a swan-right on that stream, will probably also have the means of keeping a keeper who will save him every trouble. But there are a great many people, occupiers of large farm houses, villas, or country mansions, persons perhaps of considerable wealth, who have no manorial rights, no ancient swan-mark belonging to their estate, but who still would willingly pay for the maintenance of a pair of swans and their annu-

al brood of cygnets on enclosed or artificial waters, if they knew but how to order them aright.

Imprimis, then they are called "tame swans, domestic swans;" never were epithets more inappropriate, unless we agree to say "tame hyena, tame wolf, tame rat, domestic pheasant, domestic swallow." They will come to their keeper's call and take food from his hand, they will keep at home, when they are completely prevented from ranging out of bounds abroad; so far they are tamed and domesticated, but no further, and never will be. To compare the relations which exist between them and man, with those by which we retain the goose and common fowl, is about as correct as to believe that the same temper and disposition influence the faithful dog and the wildest jackal of the wilderness. I put the case thus strongly, in order that it may be understood clearly. The comparisons may be a little exaggerated, but they will serve to raise the real truth into higher relief. Many systematic naturalists of deserved reputation have not been aware of the fact. Professor Low, speaking of the effects of domestication on birds, says "The swan, the noblest of all water fowls, becomes chained, as it were, to our lakes and ponds, by the mere change of his natural form." *Domesticated Animals of the British Islands; Introduction*, p. liv. Chained, indeed! I should like the learned philosopher to see a pair of unmutilated swans cleaving the air with extended pinions. He evidently takes the swan to be a domesticated bird, and that it will not fly away, instead of that it cannot. Waterton, who speaks only so far as he has seen, in his vivid essays, gives a very different account of the proceedings of a swan whom he indulged in the free use of his wings, for the gratification of observing his graceful evolutions in the air. But at present the discovery, and introduction, and dispersion of a species of swan that would be really tame, and stay at home without being tied by the wing, as prolific and having as valuable plumage and flesh as the common sort, would be one of the most valuable boons which the great London societies could now offer to the proprietors of limited portions of fluvial and lacustrine waters.

Is there nothing resembling this amongst the human race? The mention of the word "gipsy" will set thought-capable persons a thinking. "Oh! but they have been neglected, uneducated, ill-cared for! Educate! Educate!" say well-intentioned persons. who seem to declare that the soul of man is a *carte blanche*, and who would thereby, unthinkingly, deny the doctrine of Original Sin, as asserted by the Church of England. But I have seen enough both of bird and mankind to know that the heart of neither is a *carte blanche;* you cannot write on either, whatever it may be your pleasure there to inscribe. Your duty, in both cases, is to take them as you find them, and make the best you can of them for their interest, which will be found eventually to coincide with your own.

Swans, then, are *feræ naturæ* to all intents and purposes; of that there is no doubt whatever the law of the matter may be; but although capricious birds, wild in their very nature, like most living creatures they have some attachment to place. The first point therefore is to settle them agreeably in their destined home. Old birds are less likely to be contented with a new abode, unless very distant from their former one, and are seldom to be obtained in the market. Cygnets may be procured every autumn; if they have been put up to fat for some time, so much the better, as they will the sooner become tame, and contented with a small range—which I am supposing to be the thing required. The disadvantage of having cygnets to begin swan-keeping with is, that they are less ornamental till they have attained their perfect plumage, and the proper orange color of the bill, and that they do not breed till their third year. It is not, however, generally known that the male is capable of increasing his kind a year earlier than the female, so that a brood may be obtained from an old hen, and a cock-bird in his second year. In selecting a pair, the great thing is to make sure of having two birds of opposite sexes. Two cock-birds will not live together, and their mutual aversion would soon show that all was not right; but two hens will, which is the case also with pigeons. A friend of mine procured a couple of swans; they were affectionate and happy in each other's society; in due time they made their nest and laid. Great were the expectations; such a plenty of eggs! both swans assidnous in sitting—rather suspicious that—the produce addle-eggs. The two ladies could not raise up a family between them.

In selecting any water-birds whose plumage is alike in both sexes, and which therefore cannot be distinguished with certainty, the best rule is to see them in the water, and take that which swims deepest for the female, and that which floats with greatest buoyancy for the male, remembering that all creatures of the masculine gender have the largest lungs in proportion to their size. The neck of the cock-bird is usually thicker. An experienced eye, will, besides, detect a certain feminine gentleness and modesty in the one, and an alacrity and boldness in the other, which is a tolerably safe guide, as well as an appropriate and becoming attribute to the creatures themselves.

Supposing the reader to have obtained two cygnets that are not mere friends, but actually husband and wife, he will recollect that those reserved for fatting are never pinioned, lest it should check their progress, and he will request the operation to be performed before he has them home, in order that they may have the fewest possible disagreeable reminiscences connected with the spot where they are to spend their lives. There are two ways of pinioning birds; at the elbow joint and at the wrist. The amputation of the part of the wing which corresponds to our hand, is quite sufficient to prevent the flight of the short-winged species, as far as migration is concerned, disfigures them

less than the closer pruning, and still leaves them the means of escape from a dog or a poacher, allows them now and then in their gambols to fancy they are free, and to enjoy a sort of half-run, half-fly from the lawn into the water. Kindness, comfort, and good feeding must be employed to keep them at home as far as possible; but the loss of the last joint only of the wing will not be enough to prevent swans from joining any travelling companions who are on their way to the Arctic circle. I should recommend the female to be pinioned at the wrist, and the male at the elbow, trusting to their mutual attachment to keep the less maimed bird from deserting her mate. But however it be done, let it be set about in a workmanlike manner; no chopping nor hacking, nor hewing nor butchering. Many cygnets are annually killed by the clumsy way in which their wing is lopped off. They suffer from the shock to their nervous system, as much as from the hæmorrhage.

A skillful operator will feel for the joint, divide the skin, and turn the bone neatly out of the socket. I will allow him to shed just one drop of blood—no more. I would be as hard upon him as Portia was upon the flesh-cutting Jew.

> "This bond doth give thee here no jot of blood;
> The words expressly are, a limb of swan;
> Take then thy bond, take thou thy limb of swan;
> But in the cutting it, if thou dost shed
> One drop of cygnine blood, thy clumsiness
> Shall brand the name of 'Bungler' on thy back.
> Therefore, prepare thee to cut off the limb.
> Shed thou no blood; nor cut thou less, nor more
> But just the very limb; if thou tak'st more
> Or less, than just the limb, thou shalt bewail
> The consequence."

If any brook runs into and from the pond where they are to remain, their escape through that channel must be prevented by sheep-netting, hurdles, pales, or other fencing, which should be continued some distance inland, lest they should walk away, if they cannot swim away. This precaution will be found particularly necessary if there is any main stream in the immediate neighborhood. A feeding trough may be fixed for them in the pond, in the part where it is most desirable that they should be accustomed to display themselves Those who are fastidious about the sight of such an object, or who wish to have it thought the swans keep so much in view from purely disinterested motives (from simple affection to their masters, not to their greedy love of corn) may contrive to have it hid beneath a bank or behind a tree or shrub. The trough must be fixed in the pond on two firm posts, within arm's length of the shore, raised high enough from the water to prevent ducks from stealing the food contained therein, having a cover which lifts up by hinges, and so forms a lid, to keep out rats and sparrows, and open only in front. Many persons, however, feed their swans by simply throwing the corn into shallow water. They will skim the surface for the light grains which float, and then submerge their heads in search of that which has sunk.—Should any carp, (that fresh water fox,) be occupants of the same lake, it will be found that they soon learn the accustomed hours of feeding, and will come to take their share along with their feathered friends. But it is cruel to locate a pair of swans for the sake of their beauty, in a new made piece of water whose banks and bottom are as barren and bare as the inside of a hand-basin. A load or two of water-weeds should have been thrown in, the previous spring, to propagate themselves and afford pasturage. Sometimes after an old established sheet has been cleansed at a great expense, it is thought that swans would now look well there, and they are forthwith turned in to be starved; whereas they would thankfully have undertaken the cleansing task for nothing. Swan food exists in proportion to the shallowness and foulness, not to the extent and clearness of the water. A yard of margin is worth a mile of deep stream; one muddy Norfolk broad, with its oozy banks, labyrinthine creeks, and its forest of rushes, reeds and sedges, is better in this respect than all "the blue rushing of the arrowy Rhone," or the whole azure expanse of the brilliant Lake of Geneva.

In confined waters swans require a liberal supply of food in the Autumn, when the weeds run short. It should be remembered that at this season they have to supply themselves with a new suit of clothes, as well as to maintain their daily strength. If they had not been taught to eat corn, and have not acquired a notion of grazing, they will perish from starvation as undoubtedly as a canary bird neglected in its cage. Young birds are apt to be fanciful or stupid, and have not sense enough to come on the bank and eat grass, or pick up the threshed corn which may be thrown down to them. Sometimes they may be tempted with a lock of unthreshed Barley or Oats, thrown, straw and all, into the water, which they will instinctively lay hold of and devour. Cygnets which have been previously put up to fatten, will give little or no trouble in this respect, besides the advantage of being accustomed to the near approach of a keeper.

In one week I lost two swans, a cygnet and a year old bird, from the consequences, I fear, of a few days' short diet at moulting time. Suspecting foul play from some ill-natured person I caused a post mortem examination to be made of that which died last; but in a literal sense nothing could be found. The poor thing was empty and emaciated though it had been fed with corn two or three days before, and though it had only to ascend a bank a foot high to enjoy a plentiful feast of good grass. It had been seen sailing about in apparent health and spirits the previous evening, and my mind is not yet quite satisfied about the subject. The following remarks may perhaps afford some clue in similar cases.

"Swans wandering by night, in search of watercresses chiefly, are always in danger from the different vermin which prey upon poultry and

game—weasels, stoats, polecats, &c. And swans thus destroyed exhibit no wounds or marks upon the body, but upon the head and neck, where, on a minute inspection, the wounds are discovered through which the vermin have sucked the life-blood, leaving the bulk so little affected that the feathers are unruffled. The wounds appear scarcely the size of a pin's head, but are generally above half an inch deep. Geese and turkeys are also liable to be destroyed by these nocturnal marauders, which, like all beasts of prey, sleep through. out the day."—*Moubray on Poultry, 8th Edition, p.* 128.

One would doubt the fact of so large a bird as the swan falling a victim to a wretched little weasel. But a relation of mine had a pair of Canada geese, birds little inferior in size to the swan, which in the breeding time were suffered to shift their quarters from the farm-yard, their usual abode, to a neighboring broad, where he had rights. After a time one bird returned home alone and its missing mate was at length discovered, half-decomposed, on a sedgy islet in the broad, in such a position as to indicate that it had been surprised and killed by one of the larger weasels, a stoat, or a polecat.

Considerable difference of opinion has been entertained respecting the diet of the swan; some supposing it to be exclusively vegetable, others believing that fish enter largely into it. My own observations tend to prove that a very considerable part of their nutriment is obtained from minute insects and molluscs. The sluggish, weedy waters, where swans thrive best, abound with such creatures; and the whale is a sufficient example that the size of the prey is no index to the magnitude of the creatures that subsist on it. Swans fall off in condition very rapidly in autumn, however liberally they are supplied with corn, immediately that the temperature drops to any extent, and the minor inhabitants of the pools disappear into their winter retreats. A very small fish now and then might not come amiss to them, and spawn would be greedily devoured A swan must be considerably more destructive in this respect than the poor little water ouzel, which is so bitterly persecuted along the salmon streams of Scotland, for the alleged injury it does to the ova of the fish. The seeds of grasses, and the soft, starchy parts of aquatic plants, are no doubt a considerable portion of the daily ration of the swan. It seems to prefer sloppy, half-decayed vegetation, to that which is fresh and crisp. Spare garden-stuff, spinach, and such like, thrown out for them is liked the better for having lain soaking at least 24 hours, that is, in such time as it has become sodden and attacked by small fresh-water shell fish. If their mode of feeding is watched, it will be found to countenance the popular belief that many birds live "by suction;" they appear to suck down the pappy food, which pleases them best rather than fairly to crop and swallow it. The swan, consuming the submerged refuse of plants, is thus the scavenger of the waters, as the hyæna and the vulture are of the land. In such countries as Holland, and still more about the deltas of large rivers in the south of Europe and western Asia, their influence must be very beneficial. Indeed we are compelled to believe that they have been bountifully created to fulfil this office of cleansing the half-stagnant water-courses. Unlike the old dragons that could exhale a pestilence and infect a whole district with their breath, these winged tenants of the marsh swallow many a plague and fever up. Not a little miasma has travelled harmlessly down the throats of swans. They can fatten on poisons, although ignorant of King Mithridates, his antidote.

A curious instance of the animal diet of the swan once occurred to myself. The common brown shrimp, it is well known, inhabits and thrives in waters less strongly impregnated with salt than the open sea, which is not the case with several other species; and I was desirous of trying whether it were possible to stock with them a piece of water absolutely fresh. A quantity were procured and brought home in a fish-kettle of tidal river water; but the heat of the weather at the time was much against the success of the experiment. On arriving at their journey's end the great majority were dead. They were all, however, turned out together: a few swam off apparently unaffected by the unwonted element, and were never seen or heard of afterwards; the rest sank to the bottom; when one of my swans, expecting her feed of corn, sailed up and began feasting on the dead shrimps, crushing them in her bill before she swallowed them, and appearing much to relish her meal.

The difficulty there sometimes is in getting swans to eat corn, or to graze like geese, shows that either diet is with them an acquired taste.

At the proper age and season they will show a disposition to breed, if well fed, although restricted within comparatively narrow limits. As soon as they have decidedly fixed upon the spot for their nest, it will be an assistance to take them two or three barrowfuls of coarse litter. Sedges and rushes are the best, with perhaps a few sticks, which they can arrange at their own pleasure. The number of eggs laid will vary from five or six to ten, but the number of cygnets hatched seems, like the fall of lambs, to depend much upon the season and the weather of the few preceding months. One year the three pairs of swans nearest to me had each a brood of nine—27 cygnets in only three families. But this is above the average. I have, however, seen seven reared on a very small moat. It is better not to gratify any unnecessary curiosity respecting the eggs; indeed the parent birds will hardly allow it. The cock makes great show, and often more than show, of fight against interlopers. A blow from his pinion on land is better avoided; and in the water he would bother the strongest swimmer to escape from his fury. I was once attacked by a

swan when walking too intrusively near his lady's lying-in bed; he was keeping guard by sailing in short tacks backwards and forwards before her, but he left the water to give me a forcible hint to go about my own business. The only thing was to meet the threatened danger; so seizing his neck in one hand and his outstretched wing in the other, I tossed him as far into the middle of the stream as I could. He seemed a little astonished for a few moments, but lashing the waters into foam he would have renewed the attack had I not speedily withdrawn from his dominions. Coming to close quarters with them is the surest mode of defence. The blow of a swan's wing, to take effect, must hit a certain distance. It is clear they are mischievously minded at such times; but I think that the real danger to be apprehended has, from policy, been exaggerated, that it may act as a sort of guardian dragon to the tempting fruit of the Hesperides. There are possibly persons living who would not be unwilling to have it believed that hares and pheasants are most formidable creatures to encounter, especially on moonlight nights.

The cygnets when first hatched are of a slaty grey, inclining to mouse color. The time of incubation is six weeks, or thereabouts. A common notion in Norfolk is that the cygnets cannot be hatched till a thunder-storm comes to break the shells, and that the hen will go on sitting till the birth of her young ones is complimented with that portentous salute. A swan might boast with Owen Glendower—

> "At my nativity
> The front of heaven was full of fiery shapes,
> Of burning cressets; know, that at my birth
> The frame and the foundation of the earth
> Shook like a coward."

Let us not reply in the contemptuous language of Hotspur, nor altogether reject the popular idea; the close sultry weather which sometimes for two or three days precedes a tempest, would hasten the development of chicks that were nearly arrived at the hatching point. What effect electrical oscillations have on animal life we as yet know not, but our own feelings tell us they have some. The happy parents will charge themselves with the entire maintenance of their tender young, if they have but the range of a large extent of river banks and shallow water; will lead them up the quiet ditches, point out the juicy blade, the floating seed, the struggling insect, the sinuous worm; will then steer to shoals left by some circling eddy, and stirring up the soft sediment with their broad feet show that minute but nutritious particles may thence be extracted. As hunger is satisfied and weariness comes on, the mother will sink in the stream till her back becomes an easy landing place, and the nurslings are thus transferred in a secure and downy cradle to fresh feeding places.

But in a restricted beat they must not be left altogether to themselves. A gently sloping bank will enable them to repair at pleasure to the grassy margin. The old ones must have plenty of corn, which they will by and bye teach their young to eat; tender vegetables from the kitchen garden, such as Endive, Lettuce, or Cress, will help to sustain them, besides attracting those soft-bodied water creatures that are of all food the most needful. Pollard frequently scattered on the surface of the pond will be of material assistance, and whatever it is found that they will eat let them have in the greatest abundance. Their growth is rapid; their weight should be considerable with but little time to acquire it in. The period cannot be extended much longer than from June to the end of November. By Christmas they must all either be eaten, or have emigrated, when the parents will begin to direct their thoughts forward to a succeeding family.

A fat cygnet is a capital dish, and deserves a higher repute than it generally obtains. Its stately appearance on the table is alone worth something. Those who have only a good sized pond, say from a quarter to half an acre of water, may rear and fat an annual brood. In so small a space, the old birds must of course share with their young the extra supply of fatting corn; but they will get through the winter the better for it, and be more prolific in the spring. Neither they nor their cygnets should at any time be allowed to get poor.

When cygnets are removed from their parents to be fatted in a regular swan-pond, it is usual to separate them at the end of August or the beginning of September. At first Grass is thrown into the water to them twice a day with their other food; but this is not continued for more than a fortnight. A coomb of Barley is the established allowance to fat each swan. The corn is put into shallow tubs set just under water. The birds are considered worth from 10*s*. to 12*s*. each when they are "hopped" or "upped" from their native streams, but when brought into prime condition 2*l*., formerly 2*l*. 2*s*. They may occasionally be had for less, in which case they make a cheap as well as a handsome dish to set before a large dinner party. Their weight in the feathers varies from 25 lbs. to 28 lbs., and sometimes, though rarely, 30 lbs. They are never better than in the month of October, when the gastronomical inquirer, who is as yet unacquainted with their merits, is recommended to give them a fair and impartial trial. They may be had till Christmas, after which they are good for nothing. A bird weighing 28 lbs. before Christmas, has been known to shrink to 17 or 18 lbs. by the end of January, in spite of high feeding. Therefore, make hay while the sun shines, Mr. Epicure. As, in the spring, the Snowdrop gives way to the Primrose and the Violet, so, in autumn, the swan yields its place on the board to the turkey and the guinea-fowl. If to-day is lost, to-morrow the opportunity will have flown, in higher concerns than mere eating and drinking. Now—or, perhaps, never.

The swan-feasts that seem to have left the most pleasing impressions on the palates of the partakers have been solemnised in the course of the month of September. As to the mode of dressing, those artists who are skilled in the treatment of venison will easily cook swan, viz., with a meal crust over it to keep the gravy in. Instead of stuffing it with sage and onions, like a goose (vulgar condiments to vulgar birds), use rump-steak chopped fine and seasoned with cayenne and salt. When browned, and served to an admiring circle, let it have rich gravy and currant jelly, the latter hot as well as cold, in respectful attendance.—And is that all? No; the best remains behind. The hash next day is worth riding 20 miles to eat. Nay, more; the giblets make soup before which ox-tail sinks into insignificance. The mere writing about it has made me hungry. Mr. Yarrell gives some information on the subject, which I will not wrong him by pirating. See "British Birds," vol. iii. p. 127. He has also collected a curious list of swan-marks. I will mention two instances of swans doing well in a very small scope, as an encouragement to those who are inclined to establish a couple of these fine birds where there may be but little apparent accommodation for them.

The first occurred some years ago at Bircham Tofts in Norfolk. A single swan, driven out or wandering from Houghton, it was supposed, but never known exactly, took possession of a pond, and not being claimed remained there several years. It was not fed, but we may believe that in hard winters some charitable farmer threw it a little drop corn; and so it continued happy and well. But in the same parish there was, at a short distance, another and a smaller pond, to which the swan would occasionally walk when provisions fell short in his original residence. In one of these removals he was stoned by the village boys, and so much injured that he died. Being desirous to know whether there was any peculiarity in the aquatic vegetation of the pond, which rendered it capable of supporting such a large bird so constantly, I requested to have a sample of weeds taken from it at random; and was most obligingly supplied by the occupier. But there was nothing which may not be found in every other pond in the county—Brook-lime, Persicaria, Myosotis, and the commonest weeds. How far worms, larvæ, and small molluscs may abound, I am unable to say.

The second case, which must be well remembered by all travellers from Norwich to London by the Bury road, is at Long Stratton, in Norfolk, where swans have for some years been kept in the smallest piece of water I ever saw occupied by them, and yet they have always appeared healthy and contented. The water is exposed to the high road without any fence whatever, and the swans became so tame as to eat from the hand of casual passers by. But owing to ill nature, or mere mischievousness, perhaps, there has been a sad succession of individual tenants of the lake. About 30 years back a pair of swans were put into this very small pond or canal, which lies before the mansion of the Rev. Ellis Burroughes. This pair remained there about 15 years, but never bred, probably on account of their limited scope and confined and exposed situation. However, they kept the water quite free from any weeds, and also fed upon the Grass that grew by the water's edge. They were besides constantly supplied with a quarter of a peck of Oats every morning during the summer months, and in winter their supply of dry food was increased in proportion to their wants. They also got many odd bits of bread from the neighbors, which they would eat if thrown into the water; they were very fond of the leaves of Crowfoot, and were familiar enough to take them from the hand. After this it is grievous to be informed that one of them was stoned to death (as was believed), and that at the end of a few months the survivor met with a similar fate. It is melancholy to reflect that there should be in the world envious and malignant people who mutter to themselves in this sort of spirit: "Ah! you're a very great person, keeping swans and so on! You think they look very grand sailing before your house! You're getting up very fast! Other people can't keep swans, but other people are just as good as you. You think nobody can let you down a peg, do you? We'll see!" And next day the ornament of the neighborhood is found mutilated or murdered.

It is needless to go through the list of fresh arrivals that were successively maltreated and destroyed, but we will hurry on to the last, a beautiful and majestic bird, of which, after a residence of 4 or 5 years, my informant writes, "for shame be it spoken, some villain broke his neck, and now (March, 1848,) there are none."

This last instance enables us to make a rough estimate of the cost of maintaining a pair of swans. Those at Stratton had a quarter of a peck of Oats a day in summer. But in less incommodious places, and where garden rubbish was supplied, two pecks a week would be a fair allowance for all the year round. This amounts to 6½ coombs per annum. Take the Oats at 15*s.* per coomb, as, if they are to be bought, the best are the cheapest, and, the annual expense is 4*l.* 17*s.* 6*d.*—a sum soon spent in cleaning an artificial lake by human labor. On the other hand, half a dozen cygnets ought to be reared, and cannot be set down as worth less than 10*s.* each. Any farmer who has plenty of tail corn, will have no occasion to buy anything for them, as he can send a little of that to be ground for the cygnets, and it will be better than heavier meal, that would not float so surely. But if the swan-keeper be hospitably disposed, and choose to eat the cygnets with his friend, instead of selling them to the dealers, the brood cannot very justly be brought over to the credit side of his cash account at least. —*Ornamental Poultry.*

Horticultural Society's Exhibitions.—If there is one feature of these great exhibitions that is more worthy than another of provincial imitation, it is the strict adherence to the rules and regulations laid down for their conduct. It has often been our lot to witness the bad effects of the contrary practice at country shows: subjects admitted after the hour had passed for their reception; tents not cleared of exhibitors at the time appointed; and everything thrown into disorder, from want of carrying out, at every cost, the printed laws for their regulation. If the committees would but act firmly in every case, those exhibitors who, from indolence or neglect, were properly excluded, would be more careful for the future, and would make their arrangements accordingly. But to our immediate work,—a description of the preliminaries to the Chiswick exhibition. The Gardens are part of the Duke of Devonshire's Chiswick estate, and consist of 33 acres; the portion occupied by the exhibition, and laid down in Grass, planted with an extensive variety of plants and shrubs, is about 9 acres. To the Garden there are three entrances: the principal one from the carriage-road, leading from Turnham Green to the Duke's mansion; another from off the Green itself, leading immediately to the Council-room; and a third, the carter's entrance, by which alone all the objects for exhibition are received. As we enter the Council-room, we pass the great conservatory, as represented in the right of the woodcut (vol. i. p. 180), and then reach a tent, 173 feet long, and 33 feet wide; to the left of that another is erected, 225 feet long and 30 wide; and immediately at the end of this is another, known as the iron tent, 100 feet long and 25 wide, running straight for a part of its length, and then expanding into a half-circle, 25 feet radius, for the exhibition of the large collections of miscellaneous plants. At right angles with this is the remaining tent, 75 feet long, and 25 feet wide. All of them are divided down the middle by a sufficiently high partition to make a suitable back for the plants arranged on either side. Our usual time for being at the Gardens is about 6 o'clock A. M., and we enter at the carters' entrance. From the different roads leading on to the Green, vans of various constructions, with as various coverings, are seen wending their way to the general rendezvous. Each exhibitor, as he enters, signs a delaration of what he is intending to exhibit, and in what class; and until he does this, his productions are not allowed to proceed to the place of unloading. Before this rule was established, it was not unfrequent for an exhibitor to make himself acquainted with the strength of an opponent, and then enter the lists accordingly. We will, however, leave the van-road, and taking a footpath through a part of the gardens containing the glass erections, we reach the tents. Here are to be seen plants standing about in all directions; gardeners busy arranging them in places pointed out by one of the Society's officers appointed to this duty; laborers with hand-barrows, carrying the contents of the vans to the different exhibitors; persons are to be seen moving about in all directions, with choice specimens under their arms; and a multitude of gardeners, not exhibitors, walking about and examining the different plants, a privilege granted them upon the understanding that they move amongst them carefully, and keep out of the exhibitors' way. It is a most interesting sight to watch how all the confusion of beauty gradually assumes the most admirable forms of arrangement; no noise, no bustle, nothing to indicate that the smallest difficulty exists. Each exhibitor, as he gets his collection arranged, goes to a place appropriated to this purpose, where several clerks, in answer to his application, supply him with cards on which the necessary letters are written, with which he returns to the tent, where a person who performs this duty tacks them down upon the stage in front of his collection. It is to be remembered that all the plants are secured for travelling safely, and consequently that, as they are arranged, all extra supports have to be removed; cotton-wool, &c., that has been placed to prevent injury to the flowers in their transit, is also taken away, and everything that detracts from their beauty. The litter made in doing this is swept up and removed by persons appointed to the service; and the exhibitor, after arranging all his plants, taking a look to see that all is as it should be, goes in search of 'the Doctor.' Professor Lindley, the Vice-Secretary of the Horticultural Society, is early on the ground, and, moving about in all directions, sees that everything is going on properly; he is also at hand to refer to in cases of difficulty respecting the arrangement of plants. As the day advances, he generally takes a place where he is readily found. The exhibitor goes to him and asks for tickets: these are of two kinds,—the one for breakfast, the other for admission when the grounds are thrown open for the visitors at 1 o'clock. Regular and well-known exhibitors are supplied with both forthwith; to others the questions are put, 'What have you brought?' If important enough to merit tickets, the additional question is asked, 'Are they arranged?' If they are, the tickets are given; if not, they are refused until that is done. If the matters brought for exhibition are unimportant, tickets are not granted. By the time all the plants are arranged, it is full half-past 9, and men are seen sweeping out all the tents, gathering the litter together and removing it; and before the principal exhibitors have had a look at the general features of the whole, it is 10 o'clock, and a body of policemen, commencing at the further extremity, courteously say as much, requesting everybody to leave the grounds; and scarcely have they done this, ere the judges are seen entering in another direction to perform their important duties. But we will go out with the party with which we entered; and in doing so, outside the garden-wall, but within the Society's

gates, we come to a building which was closed at our entrance, but is now filled or filling with gardeners, who, presenting a ticket, sign their names in a book, and then take their place at a long table, where they are at once supplied with tea or coffee and cold provisions, all of the very best quality, and in great abundance. The floor above is provided with water, soap, towels, and all the other requirements for exchanging a working face, hands, and clothes for a holiday suit; and we believe we speak the sense of the whole body of the exhibitors at Chiswick when we say, that this part of the Society's arrangements is valued in no common degree, as having very greatly conduced to their comfort and enjoyment on these interesting occasions. We have also much pleasure in stating, that we understand the Council are entirely satisfied with the results of this arrangement. Let us not forget to record that many of those enjoying this refreshment have been travelling all night, after a previous hard days' work, packing and preparing; indeed, some have come as far as from Exeter, and before twelve hours have passed will be returning there again.—*The Florist and Garden Miscellany, for June.*

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New Weeping Cypress.—The introduction of a new hardy evergreen tree into this country is an event that is seldom noticed at first in the manner it deserves. This arises from our being in general imperfectly acquainted with the history of such plants; and the result is most unfortunate, for till experiment has decided whether such a plant is hardy or not, nobody knows what to think or do—the seedlings are neglected, put aside, or ruined by being cramped in pots, and at last, when their value is discovered, the race has become almost extinct, and the constitution of the survivors is, for the most part, ruined beyond recovery. This has most especially been the history of Conifers; and Cryptomeria is a striking example of the practice. Of this fine species, thousands of seedlings were distributed by the Horticultural Society, and where are they now? The greater part have perished, because the public was unacquainted with the value of so beautiful an evergreen. There was no certainty that it was hardy, and now that experience has shown that our winters will no more touch it than they will a Spruce Fir, the old stock is gone and fresh supplies must be sought in China. It was the same with the Araucaria of Chili, with the Deodar, and with many others

An acquisition of the highest interest, lately received by Mr. Standish, of the Bagshot Nursery, will undergo the same fate, unless the history of it, and the certainty of its being still more hardy than Cryptomeria, shall be pointed out, so as to leave no room for misapprehension. We allude to the Funebral Cypress.

This plant was first mentioned in Lord Macartney's Voyage, as growing in a place called "the Vale of Tombs, near the tower of the thundering winds," in the province of Zhe-hol; which is a mountainous district, lying in latitude 41° 58′ N., in Chinese Tartary, and has a far more rigorous climate than is ever known in England. The plants found in this province consist of hardy northern forms, Oaks, Elms, Ashes, Willows, Pines, Elders, Sophora japonica, together with herbs of northern habits, calculated to bear severe frost, such as Asters, Pæonies, Solomon's Seal, Pinks, &c. In the foreground of the landscape, representing "the Vale of Tombs," is a specimen of Funebral Cypress, much resembling a Weeping Willow; and the weeping tree so commonly represented in Chinese paper-hangings and porcelain is evidently the same species.

The seedlings in the Bagshot Nursery were raised from cones lately procured by Mr. Fortune, while at Shanghae, from a place 200 miles to the north of that port. We have also received a dried specimen of it, which enables us to say that it must be a plant of the greatest beauty. It may be best described as a tree like the Weeping Willow in growth, with the foliage of the Savin, but of a brighter green; it is, however, not a Juniper, as the Savin is, but a genuine Cypress. It has long been a subject of regret that the Italian Cypress cannot be made to endure our climate, and to decorate our burial-places; but we have now a finer tree, still better adapted for the purpose. *Gardeners' Chronicle.*

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Potatoes in India.—The potatoes from Bombay, Darjeeling and Cherra Poonjee seed, were wonderfully fine and healthy, and to enable the public to form some idea of the state of perfection this grand and staple vegetable has been brought to in this district, it is here recorded that 40 potatoes out of one garden weighed 20 lbs. The skin of all delicately white and fine, and every potato free from knots. *Journal of the Agricultural and Horticultural Society of India, May,* 1848.

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To Prevent Potato Rot.—Here is also a plan of management, proposed by Mr. H. L. Meyer, which deserves to be made generally known. In a paper read to the Royal Agricultural Society, he made the following recommendation:

"I propose a method of protection which, I think, may be equally effective against any one of the above mentioned causes of the disease, whether animal, vegetable, atmospheric, or electric. I propose to cover up the plant with the readiest material at hand,—namely, the soil it grows in. The manner in which this must be done is, by laying down the haulm, and covering it over with earth from the root to within a few inches of the extremity, leaving only the tips of the plant exposed to the benefits of light and air. A field, when thus treated, presents to view a succession of ridges of earth and valleys; the ridges contain the potatoes and the stems of the plants earthed over, and in the valleys or furrows

lie securely the tips of the foliage. Should the injurious blight occur while the field remains in this state, the tops of the plants are greatly sheltered from its influence by the ridges rf earth they lie between. Nothing further will be required but to watch the field, and continue to cover up the haulms from time to time, so as to keep only the tips exposed. The process thus described should be immediately put in practice, instead of the usual method of 'earthing up,' and while the stems of the plant are still pliant and manageable. This simple process will not require any outlay, and in point of labor only stands in the place of the usual method of earthing up. * * * The best way of putting this mode in practice is, by laying down the haulms with the hand, and afterwards covering them with the earth that lies between the rows. The earlier the plant can be attended to, as I have proposed, the less it is liable to receive the germ or inoculation of the infection; but owing to the present advanced state of the plant, it may be advisable to administer lime or some other purifying substance before covering the haulm. It is desirable to lay the stems down in a direction away from the east, as much towards the southwest as possibly, because it is from the east that blights of all descriptions appear to originate. The usual manner of planting potatoes being in rows only sufficiently apart to allow room for the underground shoots and tubers to vegetate, it will be found necessary to lay the haulms of the plant down in a slanting or oblique direction, so as to let the exposed tops of the haulm reach only to the centre of the valley or furrow, thereby gaining the double advantage of room and protection."

This experiment was carefully tried in the Garden of the Horticultural Society in 1848, and with success; for although, as was to be expected, the amount of produce was diminished (not, however, to the extent of more than 3 cwt. per acre,) the proportional quantity of sound potatoes obtained was more than seven times that of the rows on each side. We regard this as an artificial method of curbing the luxuriance of the potato, which it does very effectually: but whether that be so or not, it will be well to repeat the trial under varied circumstances, in order that its true value may be ascertained. The plan has this merit, that it seems incapable of doing any harm.

Another experiment was tried in the same establishment. Some haulm having become much decayed, by the 9th August, it was pulled up, and the ground was beaten and rolled as hard as possible. "Every alternate half-row being left for comparison. The rows ran north and south. The half of the first row at the south end was rolled, the north end of the next, the south end of the third, and so on alternately. The average sound produce was somewhat less in the rolled than in the unrolled portions; but the quantity *diseased was not half so great in the rolled portions* as it was in the unrolled." *Gard. Chronicle.*

DOMESTIC NOTICES.

German Greens.—We have already (see vol. iii, p. 532,) spoken of this excellent vegetable.

As this is the season for planting it, (during all the month of August,) in order to have it ready for early spring use, we venture again to say a word in favor of what we consider a great acquisition to our list of cheap and popular vegetables,—one which we hope to see in every cottage and farm garden in the country, both because it is so useful, and so easily grown.

The "German Greens" are, in fact, a species of kale or colewort. They form, in spring, a tuft or head of curled leaves, of a purplish colour, about as large as a head of lettuce, and with a flavor (when boiled and served up like common greens, or like asparagus,) very nearly resembling brocoli. In good gardens, where little extra pains can be taken to *blanch* the leaves, by turning a flower pot over each plant in spring, it will add considerably to their delicacy when cooked.

To raise German greens is as easy as to raise turnips. Any good soil will answer, with no preparation but digging. Sow broadcast; and when the plants get their third or fourth leaves, thin them out and hoe them exactly as you would turnips. No further attention need be given them, till you wish to gather them when the succeeding spring opens.

They commence growing as soon as the snow and frost leave the ground, and are in use from that time till asparagus comes. They are, to our taste, better than spinach or any other spicy greens, and cost far less trouble in the cultivation.

As Messrs. Thorburn & Co., seedsmen, New-York, obligingly introduced this plant to our notice a year ago, by presenting us a considerable package of the seed, then just imported, we have just returned the compliment, by sending them a few pounds of seed—the product of that package—which our gardener has raised, after supplying our table in the spring most abundantly with the vegetable itself; and we shall now trust to Messrs. T. & Co. to disseminate the German greens to all parts of the country; for useful and valuable as this vegetable is, as yet it is scarcely at all known in the United States.

Northern Spy Apples.—We received from Mr. Samuel Moulson, of Rochester, a box of Northern Spy apples,—handsome, fresh, and of excellent quality, on the 21st of June last. There are very few late keeping apples that will compare with this at the season of its latest perfection; and we suggest to nurserymen to grow it on Paradise stocks, as it will be in demand as a dwarf apple for amateur gardens.

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Roses in Mid-summer.—There is no season when flowers are so scarce and so much valued in this climate as in the month of July. The wealth of blossoms of spring and early summer is past, and the richness of autumn flowers has not yet commenced. In short, it is precisely the florists' "short commons" of the whole season. To make the matter worse, we have occasionally a mid-summer drouth, which parches almost every plant so that the flower beds are guiltless of the least gayety.

I know that we ought to depend upon the everblooming Bourbon, Perpetual, and other roses for beauty and fragrance at this season. But, alas, they also fail if the season is dry. I say, if the season is dry; for I have found that with the least moisture, the new growth of the everblooming roses recommences. What they want, then, is constant moisture; and this we can, I think, supply to a few beds, if we keep our everblooming roses in beds by themselves, as we ought always to do.

And this leads me to say that one of the prevailing fallacies of our gardeners, is that of planting flowers in our dry and hot climate in *raised* or *convex beds;* that is, beds rounded up in the centre, so as to throw off all the light showers. Now the practice, as a moment's reflection will convince us, should be exactly the reverse. In other words, your everblooming roses, and all summer or autumn blooming flowers, should, in our climate, be planted in *concave* beds; that is, beds with the surface depressed to the centre, like a shallow dish.

I have tried this mode, and find the difference greatly in favor of the concave beds. Every shower fills the concave bed, and thoroughly soaks the roots of the roses, and sets them into a vigorous growth, causing the product of abundant new flower shoots; while the same shower only slightly moistens the convex bed,—the larger part of it being shed off by the sloping surface.

There are the same advantages in watering the convex beds. I may also remark, *en passant*, that four beds of Bourbon and Tea roses, on which I have had all the soap-suds and waste water of the *week's washing* emptied since May, have been continually covered with brilliant flowers from the middle of May to this day. Yours respectfully, *An Amateur. New-York, July* 19, 1849.

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Pyramids of Everblooming Roses—*Dear Sir:* Nothing is so easily grown as a Prairie rose, as your readers are all aware. It is so vigorous, so healthy, and so hardy. The best mode of growing it in the garden, is trained to a stout pole about eight feet high. In this mode it forms a fine pyramid of foliage; and if the best sorts—such, for instance, as the "Queen of Prairies"—are chosen, the effect, when in full bloom, is quite magnificent.

But the Prairie roses only bloom once. After June, one has no flowers on these fine pyramids. Thinking of this defect, it occurred to me three years ago to bud a couple of these pyramids in various places with the hardier Bourbon Roses. It has succeeded to a charm. They unite very readily with the Prairie stock, and bloom abundantly for several months after the blossoms on the Prairie shoots are past by. I have one before my window at this moment, on which Souvenir de Malmaison and General Dubourg are loaded with flowers. I do not cover the whole pyramid with the everblooming shoots, (though perhaps this would be the best course,) but prune the Prairie shoots in so as to preserve a due balance, and give each a fair chance. Yours, *A Philadelphia Subscriber. July* 12, 1849.

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Diseased Pear Leaves—*Dear Sir:* I have observed on my "Butter," or "Virgalieu" pear trees, a disease on the leaves. It attacked the leaves, I think, about the 20th ult, and looks like spots of black mould. Previous to the leaves being spotted, I saw no disease on the fruit; but soon after the leaves became diseased, the fruit also became diseased or spotted in the same manner.

I have also noticed that on some parts of the trees, the leaves are more diseased than on other parts; and wherever the disease is the worst on the leaves, it is also worse on the fruit. Some of my neighbors have noticed that their "Virgalieu" trees are diseased in the same way.

It is barely possible that the disease attacks the leaves first, and the fruit afterward; and if so, we may yet be able to reclaim this fine old variety.

I enclose you two leaves with the disease attached to them. I observe, also, the Beurre Gris is attacked the same way in the leaf. I am, dear sir, yours truly, *Tho. Hancock. Ashton Nurseries, Burlington, N. J., July* 6, 1849.

[We have examined the leaves sent, and recognize the disease as an old acquaintance.

It is a feebleness or want of vitality in the epidermis, or outer surface of the leaf, and, as our correspondent conjectures, makes its appearance in the leaf first, and afterwards in the skin of the fruit, which is spotted with small patches of a brown or black colour.

It is undoubtedly owing to a want of specific food in the soil. A very liberal manuring of ashes and strong animal manure will bring the tree into good health again, when the disease will disappear. We have seen it tested lately, in

two instances, with complete success. But in the case of large and old trees. it is not sufficient to give the soil a top-dressing of these manures. A trench must be dug all round the outside of the roots,—the old soil thrown aside, and the trench filled with new soil, mixed with ashes and animal manure. Ed.]

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Mowing Machine.—Before good lawns can become common in this country, there must, I think, be a labor-saving machine invented for cutting the grass. It has occurred to me that shears, (not unlike the cloth shears used in a factory,) might be attached to a one horse roller, with which it would be but a boy's task to cut and roll a lawn. It seems to me that an ingenious person could invent a machine, combining these two features of the roller and shears, or cutting blades. I suggest it, hoping some gentleman will take measures to have such a thing made. Yours, *J. C. R. Dalton, Ohio.* [There are mowing machines now in use, in England, which mow and roll lawns very well; but they only work on perfectly level and smooth surfaces, so that the scythe, after all, holds its place for general purposes. Ed.]

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ANSWERS TO CORRESPONDENTS.

Apples.—*J. W. B.*, (Delaware.) The specimens you sent us are not White Juneating, but Early Harvest,—a larger and better apple than the former. Sugar-loaf Pippin is now (July 22d,) beginning to ripen in our garden. It is a good and constant bearer, and a handsome fruit—the flavor only tolerably good; but it may prove a good market fruit.

Fruit-room.—*A Subscriber*, (New-Haven.) The best place for a fruit-room is, we think, under ground, so as to preserve a uniform temperature. It should be kept rather dark, but well ventilated and dry. The nicest point is to clear out everything like decay *every day*, without fail; as the fungus which causes the rotting of fruit spreads from one to another very rapidly,—so that in a short time, a dozen decaying pears will communicate the decay through the whole fruit-room. Emerson's ventilators, now so much used about Boston, would answer admirably in connection with a fruit-room, and would enable us to keep it dark, and yet fresh and cool.

Carnations.—*A. N.*, (New-Bedford.) Lay your carnations immediately. It should have been done a fortnight ago. For directions, see vol. i, p. 78. If you are careful to *water* the layers every evening, they will still root finely before November.

Bisque Labels.—Mr. Buist, seedsman and florist, Philadelphia, informs us that the price of these beautiful and useful labels, is from $2 to $2.12 per 100, of three or four patterns.

Plum on Peach Stock.—*H*, (Syracuse.) The objection to working the plum on the peach, is that it makes the plum comparatively a short lived tree. The peach stock being much more liable to the attacks of insects than the plum, it is also less valuable on that account.

Garden Vases.—*A New Subscriber*, (Burlington, Iowa.) You can procure various patterns,—some of them fine ones, at the warehouse of Jas. Lee & Co., 11 Broad-street, New-York. They are quite durable,—being made of a species of fire clay.

Annuals.—*W. A.*, (Staten Island.) The Californian annuals,—*Platystemon, Nemophila, Clarkias*, etc., all require to be grown in the shade. Your failure is owing to your planting them in the open border, exposed to the sun. They will do far better if sown the latter part of this month; as the young plants will stand the winter well, and bloom, most acceptably, in May next.

Cuttings.—*A Lady Florist*, (St. Louis.) In order to carry your Verbenas, Petunias, Salvias, etc., through the winter safely, you should strike the cuttings this month. They will root very readily now, if planted in pots, and the pots placed in a glazed frame, set in a shady situation.

Dahlias.—*W. Williams.* Place some mulching of grass, straw, or litter, over the roots of your choice Dahlias. It will keep them cool, and preserve that moisture without which they cannot bloom freely. To entrap the earwigs which infest this plant, eating off the flower buds, place a small flower-pot, inverted, upon the stake with a little hay in the bottom, or put some bean-stalks amongst the branches, and examine them every morning, blowing off the insects into a basin of hot water.

Apricots.—No sorts can be depended on for a crop like either Breda, or Dubois' Early Golden. The latter is the earliest. The Large Early is larger, handsomer, and better flavored, but not so good a bearer.

HORTICULTURAL SOCIETIES.

PENNSYLVANIA HORT. SOCIETY.

The stated meeting for July was held on Tuesday evening 17th. The President in the chair. Taking into view the season occurring before the maturity of fruits, and when exotic plants were mostly out of flower, an indifferent display was anticipated, and yet to the surprise of visitors, there was a fine show. Among the fruits there were choice specimens of Grapes raised under glass—a cluster of Black Hamburg from Judge Kane's green-house, contained berries of remarkable large size; and fine bunches, same variety, were shown by the president's gardener and William Westcott; two dishes of a white variety, Malagas and Chasselas were exhibited by Sam'l. W. Gumbes, of Montgomery Co, of unusual size: Moorpark Apricots of handsome appearance, were presented by John Anspach and Jas. Furness; Miser Plums, by A. Parker; a fine bunch of Bananas and a dish of Nectarines from Jas. Dundas' green-house; Pears of Muscat Robine variety, by Isaac B. Baxter; Apples, Early Harvest and Summer Queen, by John Perkins; and Raspberries and Gooseberries from the President's garden.

The following contributors each furnished tables of beautiful flowering plants:—Robert Buist, Caleb Cope, James Dundas, Fred'k Lennig, John Lambert and Miss Gratz.

Vegetables in great variety and profusion.

The following awards of premiums were announced. For the intermediate meeting, July 3d, 1849. The committee on plants and flowers awarded the premium for the best six varieties of Carnations, to Robert Buist; for the second best ditto to Matthew Mills; for the best American Seedling Carnation, Robert Buist; for the best six varieties of Picotees; for the best American Seedling Picotee, to Robert Buist.

The committee for awarding premiums on fruit, beg leave to report, That they have awarded the premium for the best two quarts of Red Currants, and best White Currants, to J. J. Jennings; for the best two quarts of Black Currants, to Maurice Finn, gardener to Jno. Lambert; for the best quart of Goosberries (the Angler) and for the second best do. (Bunker Hill) to Isaac B. Baxter; for the best quart of Raspberries, (Red Antwerp) to Tho. Hancock; for the second best, (the Fastolff) to Wm. Hill.

The committee award a special premium of two dollars, for a beautiful and delicious Pine-Apple, raised under glass, to James Bisset, gardener to Jas. Dundas.

The committee notice with pleasure, six new Seedling Raspberries, of fine size and flavour, shown by Robert Buist. No. 1 is very large, round, and of a cream color; No 5 is also very large, conical, and of a yellow color. These two the committee think are eminently entitled to especial notice, and will be held under consideration for future action; the other four kinds were of crimson color.

Some fine specimens of Northern Spy Apples were shown by Samuel Moulson, of Rochester, N. Y., on the present occasion.

Report of the Committee on Plants and Flowers for the Society's stated meeting, held 17th July, 1849.

For the best hot-house plants, to Ben Daniels, gardener to C. Cope; for the best green-house plants, and the second best ditto, to Rob't Buist; for the best collection of plants in pots, to Jas. Bisset, gardener to J. Dundas; for the second best collection, to David Scott, gardener to Frederick Lennig; for the third best collection, to Ben Daniels; for the best display of indigenous plants, to Thomas Meehan; for the best bouquet of indigenous flowers, to Robert Kilvington; for the best basket of cut flowers, to Ben Daniels; for the second best basket, to Robert Kilvington: for the best basket of indigenous flowers, to Rob't Kilvington, and a special premium of one dollar to Maurice Finn, for a pretty basket of cut flowers.

The fruit committee beg leave to report that they have awarded the following premiums: *Grapes.* For the best three bunches, black variety, Black Hamburgh, to Wm. Westcott; for the second best ditto, to Ben Daniels; for the best three bunches white variety, White Chasselas, to Fred'k. Wolfe, gardener to Sam'l. W. Gumbes, Montgomery Co.; for the second best ditto, to the same. *Apricots.* For the best one dozen Moorpark, to John Anspach, jr.; for the second best Moorpark, to James Furness. *Plums.* For the best, the Miser, to A. Parker. *Pears.* For the best six specimens Muscat Robine, to Isaac B. Baxter. *Apples.* For the best one dozen Early Harvest, to John Perkins; for the second best, Summer Rose, to the same.

The committee also award special premiums of one dollar each, for a fine bunch of Bananas, and for a dish of Nectarines, to Jas. Bisset, gardener to Jas. Dundas.

The committee specially noticed a bunch of very fine Black Hamburg Grapes from Judge Kane's green-house.

The committee on vegetables beg leave to report that they have awarded the following premiums:—for the best display of vegetables by market gardeners, and for the second best display, to Anthony Felton; for the best display by amateur gardeners, to Patrick Gallagher, gardener to Miss Gratz; for the second best display, to Ben Daniels, gardener to C. Cope; for the third best display, to John Austin, gardener to Isaac B. Baxter, and special premiums of one dollar each, to F. Wolf, gardener to S. W. Gumbes, and Maurice Finn, gardener to John Lambert.

Objects shown at the intermediate meeting July 3d.

By Robert Buist, 12 Picotees, 6 Carnations, Seedling Picotee and Carnation.

By Matthew Mills Frankford, 12 Carnations and Flake Seedling.

By J. J. Jennings, 6 Carnations, Picotees and Seedlings.

By Robert Kilvington, 12 Carnations and Seedlings.

Fruit.—By James Bisset, gardener to Jas. Dundas, Pine Apple.

By J. J. Jennings, White and Red Currants and Gooseberries.

By Patrick Gallagher, gardener to Miss Gratz, Gooseberries, White, Red and Black Currants and Seedling Raspberries.

By Tho. Hancock, Raspberries, large Red Antwerp. *now* the first time of fruiting, Fastolf, White Antwerp and Perpetual.

By Isaac B. Baxter, Gooseberries, Angler, Bunker Hill and Greenwood varieties, and Red and White Currants.

By Robert Buist, six fine Seedling Raspberries.

By Maurice Finn, gardener to J. Lambert, Gooseberries and Black Currants.

By Wm. Hall, Raspberries, Fastolf and Black Genesee, and Red Currants.

By Samuel Moulson, Rochester, a dish of Northern Spy Apples.

Objects shown on the 17th July—stated meeting.

Plants.—By Robert Buist, Robert Scott, foreman, Pentas carnea, Fuchsia coronet, F. Caroline, F. gigantea, Plumbago Lar panta, Lilium punctatum, Gloxinia speciosa and Amaryllis, Buistii.

By Ben Daniels, gardener to C. Cope, Oncidium papilio, Gongora macculata, Accropera Lodigiesii, Macredenia lutea, Bilbergia pyramidalis, B. var. Swainsonia galigifolia, Fuchsia corallina, Achimenes grandiflora, A. picta, A. rosea, and A. pedunculata.

By James Bisset, gardener to Jas. Dundas, Torenia asiatica, 2 Justicea carnea major, Trachelium ceruleum, 2 Achimenes grandiflora, Columnea Roxburgii, Ruellia formosa, Gloxiania speciosa, G. candida, Bassiæa rotundifolia, etc.

By David Scott, gardener to F. Linnig, Erythrina cristagalli, Torenia asiatica, Rondeletia speciosa, Pentas carnea, Cyrtoceras reflexa, Begonia parviflora, Russellia juncea, Gloxinia of var., rubra grandiflora, digitalifolia, Cartoni, magniflora, and delicatissima.

By Maurice Finn, gardener to Jno. Lambert, Russellia juncea, Hydrangea hortensis, Brugmansia floribunda, Justicia anisophylla, cleroxiendron splendens, Mongiesia polifolia, Helchrisam fulgidum, Justicea carnea, Latana mutabilis, Swansonia galegifolia, Xytophyll sp, Achimenes grandiflora, A. longiflora, Rondeletia speciosa, Gloxinia sp. Plumbago rosea, Oxalis sp. Brunsfelsia, grandiflora, Cyrtocera reflexa, Gardenia radicans & G sp.

Baskets of cut-flowers.—By Ben Daniels, R. Kilvington, Maurice Finn, P. Gallagher, Tho. Meehan, etc.

Fruits.—By Wm. Westcott, gardener for the Institution of the Ladies of the Sacred Heart, Grapes, fine bunches of Black Hamburgh and White Chasselas.

From Judge Kane's green-house, a very fine cluster of Black Hamburgh Grapes.

By Ben Daniels, gardener to C. Cope, six bunches of Black Hamburg Grapes, Gooseberries and Raspberries.

By Sam'l. W. Gumbes, Oakhall, Montgomery Co., six

bunches of White Grapes, Malaga and Chasselas, very fine.

By John Anspach, Moorpark Apricots.

By James Furness, Moorpark Apricots.

By John White, Burlington Moorpark Apricots, too late for competition.

By Alex. Parker, Plums, the Miser.

By Isaac B. Baxter, Pears, Muscat Robine.

By John Perkins, Apples, Early Harvest and Summer Rose.

By James Bisset, gardener to Jas. Dundas, a large bunch of Bananas, and a dish of Nectarines.

By Gerhard Schmitz, Cherries.

Vegetables.—By Anthony Felten, two large tables well filled.

By Ben. Daniels, gardener to C. Cope, Hoo Sung, the new Chinese vegetable, properly prepared for culinary use, with a variety of fine specimens.

By Patrick Gallagher, gardener to Miss Gratz, a fine display.

By John Austin, gardener to Isaac B. Baxter, a good variety.

By Maurice Finn, gardener to John Lambert, a choice collection.

By Fred'k. Wolf, gardener to J. W. Gumbes, a good collection.

THOS. P. JAMES, Rec. Secretary.

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MASSACHUSETTS HORT. SOCIETY.

BUSINESS MEETINGS.

June 2d, 1849.—President SAMUEL WALKER in the chair.

Voted, That a delegation of five be appointed by the Chair to attend the Convention to be holden at Syracuse, N. York, and Messrs. C. W. Hovey, Josiah Lovett, 2nd., B. V. French, Aaron D. Williams and Eben Wright were appointed delegates.

This meeting having been duly and legally called, for the purpose of electing a Treasurer of the Corporation, to fill the vacancy existing by reason of the resignation of Frederick W. Macondray, Esq., and the polls having been kept open half an hour, Major Josiah Lovett, 2d, and Eben Wright, were appointed a committee to collect, assort and count votes; who reported that the whole number of votes cast was 20, all of which were for WILLIAM R. AUSTIN, Esq, of Dorchester, who was accordingly elected.

June 9th, 1849.—President SAMUEL WALKER in the chair.

The following gentlemen were elected members of the Society:—W. H. Richardson, Boston; F. W. Lincoln, Canton; and F. A. Davis, Milton.

June 16th, 1849.—Vice President BENJAMIN V FRENCH in the Chair. *S. Downer, Jr., Esq.*, was appointed Sec'y pro. tem

Hon. M P. WILDER, as chairman of the committee of Finance, submitted the following Report:

That the Treasurer, under the direction of said committee, had caused to be sold the following stocks belonging to the Society:—

At public auction—12 shares Boston & Worcester R. Road,				at 108½	1,299
	6	" Old Colony,	"	80½	483
	9	" "	"	80	720
Private sale,	10	" Bos't. & Wos't.	"	108¼	1,082,50
					3,584.50
Charges and Comss.,					12.75
					3,571,75

The above amount was passed into the Treasury, and constitutes a portion of the fund applied by the Treasurer for the payment of the mortgage on Horticultural Hall, due on the 21st ultimo.

June 23d, 1849.—President SAMUEL WALKER in the chair.

On motion of Hon Benj. V. French, it was voted, That the President take measures to have some mark of respectful reciprocity extended to such gentlemen and Institutions as shall favor this Society with donations of whatever nature.

June 30th, 1849.—President SAMUEL WALKER in the chair.

On motion of Mr. Joseph Breck, it was voted, That the sum of twenty-five dollars be paid by the Treasurer to Mr. David Haggerston, for services rendered by him at the Semi-Annual Exhibition of the Society.

A communication was received from Dr. BRINCKLE of Philadelphia, and it was ordered to be placed in the hands of the committee of publication, to be printed with the Transactions of the Society.

Chas. Fred'k. Adams, of Boston, was elected a member of the Society.

A stated meeting of the Society was held Saturday, July 7th, 1849.—President SAMUEL WALKER in the chair

Mr. JOSEPH BRECK, as Chairman of the Committee of Arrangements, reported that the sum of one hundred and ten dollars and seventy-five cents, was received at the door during the Semi-Annual Exhibition of the Society.

The following gentlemen were elected members of the Society:—Thomas Rice, Jr., L. C. Childs, James Huckins, Nicholas Delcon, and Z. B. Crooker.

EDWARD C. R. WALKER,
Recording Secretary.

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ALBANY AND RENS. HORT. SOCIETY.

The second exhibition of the society was held at the Agricultural Rooms in the old State Hall, on Tuesday, the 3d of July, and as will be perceived by the reports of the committees annexed, was in all respects such as to encourage its members to further efforts. The Hall was opened to the public at 1 P. M, and from that hour until the close of the exhibition, was thronged with ladies and gentlemen from this city, Troy, and their vicinities.

At a meeting of the society, Joel Rathbone, esq, its President, in the chair, the following gentlemen were chosen delegates to represent it in the North American Pomological Convention, which is to assemble at Syracuse on the 14th day of September next, viz: from the county of Albany, J. McD. McIntyre, Herman Wendell, M. D.; E Emmons, M D.; B. P. Johnson, A. Osborn, and James Wilson; from the county of Rensselaer, V. P. Douw, Stephen E. Warren, B. B. Kirtland, D. Thomas Vail, Amos Briggs, and William Newcomb.

B. P. JOHNSON, Secretary.

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FRUIT.

The committee on Fruit reports, that there were exhibited by—

Stephen E Warren, esq., of Mount Ida, Troy: Seven varieties of cherries, viz: Black Tartarians, May Dukes, Elton, Early White Hearts, Black Hearts, Belle de Choisys and Napoleon Bigarreaus.

J. McD McIntyre, Albany: Two varieties of cherries, viz: Tradescants Black Heart and May Dukes; and also some very fine specimens of Lancashire gooseberries.

Dr. Herman Wendell: Fourteen varieties of cherries, viz: May Dukes, Waterloos, Eltons, Napoleon Bigarreaus, Florence, Wendell's Mottled Bigarreau (unripe), Belle de Choisy, Carnation Bigarreau (a seedling), Graffion or Yellow Spanish, Black Tartarians, Bigarreau Couleur de Chair, Large Red Bigarreau, Black Bigarreau, and a French variety, received without label, resembling China Bigarreau.

V. P. Douw, of Wolvenhook, Greenbush: Two varieties of cherries, viz: Early Richmonds and Black Tartarians; very fine White Smith gooseberries, and Green Citron muskmelons.

B. B. Kirtland, of Cantonment Farm, Greenbush: Seven varieties of cherries, viz: Elton, Graffion or Yellow Spanish, Black Eagle, Black Heart, Honey Heart, May Duke, and a seedling resembling Transparent Guigne; eight varieties of strawberries, viz: Aberdeen Beehive, White Alpine, Hovey's Seedling, Black Prince, Ohio Mammoth, Scioto, Columbus and Burr's New Pine. This exhibition of strawberries attracted much attention from their large size and beautiful appearance, and the committee cannot omit to add, that the further opportunity offered them to compare Burr's New Pine with other standard varieties, fully confirms them in the opinion expressed at the last exhibition, viz: "That it was entitled to the first rank, taking into consideration its many desirable qualities."

By Col. Rathbone, of Kenwood: A dish of very fine Red Antwerp raspberries.

By E. E. Platt, of Arbor Hill: Nine varieties of cherries, viz: May Dukes, Black Hearts, Black Tartarians, Graffion or Yellow Spanish, Black Bigarreau, and four varieties of seedlings not fully ripe, but giving promise of superior qualities.

By Jacob Teller, of Rose Hill, Greenbush: Napoleon Bigarreau, and Early White Heart cherries.

By Dr. Alden March, Albany: Three varieties of cherries, viz: May Dukes, Black Tartarians, and Black Hearts.

PREMIUMS.

For the best and most extensive collection, to Dr. Herman Wendell,	$3 00
For the second best do do to E. E Platt,	2 00
For the best three varieties—Black Tartarians, Eltons and Belle de Choisys—to Stephen E. Warren, of Mount Ida,	2 00

For the best one variety—Black Tartarian—to E. E. Platt,..... 1 00
And the following discretionary premiums:—
For very fine Red Antwerp Raspberries, to Joel Rathbone,..... 1 00
For large and beautiful Gooseberries, to J. McD. McIntyre,..... 1 00
For Green Citron Musk Melons, to V. P. Douw,..... 1 00

For the Committee,
JOHN WILSON, M. D., Chairman pro tem.

FLORAL DESIGNS, &c.

The Committee reports that there were exhibited

By Joel Rathbone, a beautiful round bouquet for centre table vase, arranged in good taste. A very fine flat hand bouquet, beautifully arranged.

By James Wilson, one large round bouquet, for centre table vase, arranged with skill and good taste. One large flat bouquet for mantle vase, beautifully arranged. One exquisitely arranged round bouquet for the hand, to which the Committee awarded the premium of one dollar. One flat bouquet for the hand, arranged with equal taste to the above, to which the premium of one dollar is awarded. Four vase bouquets, arranged with taste and skill.

By Mrs. W. A. McCulloch, a flat bouquet for the hand, beautifully arranged and composed of choice flowers.

By Wm. Newcomb, of Pittstown, one large, flat bouquet for centre table vase, arranged with good taste, to which the premium of two dollars is awarded.

By Dr. Herman Wendell, a beautifully arranged, large, round bouquet for centre table vase, to which the premium of two dollars was awarded. A basket bouquet with handle, arranged with exquisite taste and skill, to which the premium of one dollar was awarded.

By Mrs. Kirtland, a basket bouquet, arranged with taste and filled with cherries of various kinds.

By V. P. Douw, of Wolvenhook, a very beautiful, round bouquet for centre table vase, arranged with good taste; a flat bouquet for the hand, beautifully arranged, and a basket bouquet, arranged with good taste.

By B. Strong, Jun., a beautifully arranged, round bouquet.

For the Committee,
STEPHEN E. WARREN, Ch'n.

GREEN-HOUSE PLANTS AND FLOWERS.

The committee reports that there were exhibited.

By Joel Rathbone, Esq., of Kenwood, plants in pots, Gardenia Florida, Euphorbia splendens, Opuntia Rosea, Russelia Juncea, Cycus Revoluta, and Hydrangea Hortensis; and cut flowers in large numbers, as Roses—Queen of the Prairies, Baltimore Belle, Prince Albert, Duchesse of Sutherland, George the 4th, &c. &c., Delphinum Siberianum; Pelargoneums—Bridegroom, Queen Dowager, Alarum, Victoria and Lady Washington, fifteen varieties of Verbenas, Pansies in several varieties; Fuchsias Globosa and Splendens; Passifloras, Alata and Racemosa, &c. &c.

By Dr. Herman Wendell, new running rose Anna Marie, Luxemburgh Moss roses and buds, twenty-one varieties of Pinks; Phloxes—Grato-Picta, Van Houtii, Superbissima, Goethe, Eclipse and Anais Chauviere, &c., &c.

By E. E. Platt, Double Dianthus Barbatus, and Old Cabbage or Provens roses.

By Mrs. Jasper S Keeler, a well grown Agapanthus Umbellatus plant, having two stems laden with its beautiful blue flowers, also a number of choice Roses, White Lilies, &c., &c.

By Wm. Newcomb, of Pittstown, twenty-six varieties of Roses, eight varieties of Dahlias, upwards of eighty varieties of annual, biennial and perennial flowers; several varieties of Pansies, &c., &c.

By James Wilson, seven varieties of Fuchsias growing in pots, well cultivated and laden with flowers; two Gardenia Floridas, Burchillea Capensis, Heliotropeum Voltamerianum, Double Oleander, and Tom Thumb Pelargoneum, all growing in pots and covered with flowers; fifty varieties of Roses, thirteen varieties of Dahlias, several varieties of the newest and best Verbenas, twenty-five beautiful Picotee Pinks, and twenty-five of the best and most beautiful Carnations, together with a fine display of other annual and perennial flowers.

By Mrs. S Wait, a large collection of rare and beautiful flowers, several varieties of Verbenas and Pinks, Dianthus Barbatus, &c &c.

By V. P. Douw, of Wolvenhook, Roses—Pallida, Madam Hardy, Prince Albert, Provens, Queen of the Prairies and Red Moss, Caprifolium Flexuosum, Clematis Erecta, Aconitum Napelles, Delphinum Elatum, two varieties of Spireas, Delphinum Siberianum, Dianthus Barbatus, several varieties of Pansies, &c., &c.

By E. C. McIntosh, several varieties of Dahlias, and several other varieties of flowers.

PREMIUMS.

For the six best varieties of Fuschias in pots, to Jas. Wilson, for Lady Milbank, Chauviere, Comet, Exoniensis, Caroline and Acantha,..... $2 00
For the best six plants of different varieties in pots, to James Wilson,..... 3 00
For the best six varieties of Carnations to Jas. Wilson, for Achilles, Euterpe, Cynthia, Brunette, Lady Peel, and Mirabelle,..... 2 00
For the best six varieties of Picotees to Jas Wilson, for Scarlet Flake, Flora, Eloise, Climax, Cleopatra and Incarnata,..... 2 00
For the best display of annual and perennial flowers to Wm. Newcomb, ... 2 00

And a discretionary premium of $2 to Joel Rathbone, esq., for a fine display of growing plants and cut flowers.

Also, a discretionary premium of $1 to V. P Douw, esq., for a beautiful display of cut roses and other flowers.

WM. NEWCOMB, Ch'n.

VEGETABLES.

The committee respectfully report that the contributions to the exhibition were as follows:

W. Newcomb, of Pittstown—Hoo-Sung, and very large and fine Silverskin Onions. Mr. Newcomb informs the committee that he thinks the Hoo-Sung an excellent vegetable, and when cooked in the same manner as asparagus, is more palatable

V. P. Douw, of Wolvenhook—Early Mohawk Beans, fine early York Cabbages, and fine Blood Beets.

N. B. Warren, of Mount Ida, Troy—Marrowfat Peas, very fine; and Mountain June Potatoes, more fully grown than at the last exhibition. These potatoes were remarkable for size and healthiness of appearance

Joel Rathbone, of Kenwood—Hoo-Sung and early Mohawk Beans.

PREMIUMS.

Awards having been made at the last exhibition, to most of the varieties of vegetables now offered, only the following premiums are allowed by the rules:—

On Onions—W. Newcomb, of Pittstown,..... $1 00
" Marrowfat Peas—N. B. Warren, of Troy,... 1 00
" Beans—Early Mohawk—V. P. Douw..... 1 00

R F. JOHNSTONE, Chairman.

The third exhibition of the Society, held on the 25th July, at the Agricultural Hall, was a most successful one, especially in fruits and vegetables. Owing to the extreme drouth, the show of flowers was not so extensive as at some former exhibitions. The exhibition of Gooseberries was more extensive in variety, and the fruit finer in quality, than any we have seen. And of Cherries, Currants and Raspberries, it was also unusually fine. The Society have reason to be encouraged from the spirit which is displayed in every department.

B. P. JOHNSON, Sec'y.

REPORTS OF COMMITTEES.

FRUIT

The committee on Fruit reported that there was exhibited by Henry Vail, Esq., of Ida Farm, Troy, six varieties of Cherries, viz: Black Heart, Black Tartarian, Black Eagle, Late Duke, Early White Heart, and a very beautiful, bright red colored Seedling, raised by Mr. Vail, of the Morello family, and resembling the Carnation; seventeen varieties of Gooseberries, of very large size and skillfully grown, being entirely free from rust; five varieties of Currants, and five varieties of Raspberries.

By B. B. Kirtland, Cantonment Farm, Greenbush, four varieties of Cherries, including a seedling resembling Transparent Guigne; three varieties of Gooseberries, and Madeleine or Citron des Carmes Pears, fully ripe

By Dr. Herman Wendell: Nine varieties of cherries; seven varieties of currants, and five varieties of Gooseberries.

By E. N Prentice, Mount Hope: Six varieties of cherries; three varieties of currants, and ripe Yellow Harvest Apples.

By E E. Platt: fourteen varieties of cherries, including eleven seedlings, some of which were of very fine character,

much resembling their parent, the White Bigarreau or Ox Heart, and one of which, too unripe to enable the committee to judge of its character, promising to be of large size and fine appearance

By Eli Young: Ripe and beautiful Peach Apricots.

By A. J. Parker: Sweet Montmorenci cherries, and four varieties of Gooseberries.

By Mrs. Weed, Washington street: very fine Gooseberries.

By Wm Newcomb, Pittstown: White Smith gooseberries and English and Missouri Black currants.

By James Wilson, of Albany: Forty-one varieties of gooseberries, and Late Duke and Imperial Morello cherries.

By V. P. Douw, Wolvenhook, Greenbush, Red and White Antwerp Raspberries; Stoddart's Red Alpine Strawberries; five varieties of Gooseberries, and Black Morello Cherries

By John S. Gould, Red Alpine Strawberries, a d Green Amber Gooseberries.

By Warner Daniels: Woodward's White Smith Gooseberries, and a seedling variety resembling it.

PREMIUMS.

The following premiums were awarded on Cherries:—

For the best and most extensive collection, to Dr. Herman Wendell,	$3 00
For the second best and most extensive collection, divided between Henry Vail, Esq., of Mt. Ida, Troy, and E. P. Prentice, Esq., of Mount Hope, Bethlehem, each	1 00
For the best three varieties, to Dr. Herman Wendell, for Wendell's Mottled Bigarreau, Graffion or Yellow Spanish, and Elkhorn or Tradescants Black,	2 00
For the best one variety, to Dr. Herman Wendell for Wendell's Mottled Bigarreau,	1 00
On Gooseberries—For the most extensive collection, to James Wilson, of Albany,	3 00
For the best collection, to Henry Vail, of Ida Farm, Troy,	3 00
For the finest flavored variety, to Henry Vail, for Compton's Sheba Queen	2 00
For the second best, to Henry Vail, for Lady of the Manor,	1 00
On Currants—For the best and most extensive collection, to James Wilson,	3 00
For the best and finest flavored variety, to James Wilson, for Knight's Red	2 00
For the second best, with same requirements, to Henry Vail, for White Dutch,	1 00
On Raspberries.—For the best and most extensive collection, to Henry Vail,	3 00
For the best and finest flavored variety, to Henry Vail, for Fastolff	2 00
For the second best, with same requirements, to Henry Vail, for Franconia,	1 00

And special premiums of one dollar each, to E. P. Prentice, for Yellow Harvest Apples; to B. B Kirtland, for Citron des Carmes Pears, and to Eli Young, for Peach Apricots.

SANFORD HOWARD, Ch'n. Com.

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I EEN-HOUSE PLANTS—FLORAL DESIGNS.

The committee report that there was exhibited by James Wilson, the following varieties of plants growing in pots, to which the premium of three dollars was awarded, viz: four Fuchsias, Achimenes Picta, Gloxinia speciosa and Torrenia Asiatica; also, by the same, a beautifully arranged round bouquet for centre table vase, and to which the premium of two dollars was awarded; a flat bouquet for mantle vase, arranged with good taste and, composed of choice flowers; an exquisitely arranged flat bouquet for the hand, to which the premium of one dollar was awarded; and a round bouquet for the hand, arranged with equal taste, to which the premium of one dollar was awarded.

By Joel Rathbone, a round bouquet for centre table vase, arranged with taste and skill.

By Dr. Herman Wendell, two basket bouquets with handles, one round, and one oval, and arranged with exquisite taste; the premium of one dollar was awarded to the oval one

By Wm. Newcomb, of Pittstown, a flat bouquet for mantle vase, arranged with great good taste, to which the premium of two dollars was awarded

By John S. Gould, a small basket bouquet, most tastefully arranged, and a large basket bouquet for centre table, without handle, arranged with skill and taste.

WM. NEWCOMB, Ch'n.

FLOWERS.

The committee on Flowers report that there was exhibited by V. P. Douw, of Wolvenhook, a large collection of annual and perennial flowers, numbering over forty varieties; fifteen varieties of roses, and fifteen varieties of Pelargoneums.

By James Wilson, a distinct and very beautiful seedling Phlox, with pink ground and white stripe through the centre of the petal; six varieties of Roses, and 22 varieties of Dahlias

By Joel Rathbone, a collection of over fifty varieties of annual and perennial flowers; sixteen varieties of Pelargoneums; sixteen varieties of Hybrid perpetual and Bourbon Roses; seventeen varieties of Verbenas, and a very fine collection of choice Picotees and Carnations.

By Wm. Newcomb, of Pittstown, a collection of over eighty varieties of annual and perennial flowers, and forty varieties of Dahlias.

PREMIUMS

The premiums were awarded as follows:

Dahlias.—For the best exhibition, to Wm. Newcomb,	$3 00
For the best twelve varieties, to Wm. Newcomb, for Lady St. Maur, Constantia, Fulwood Scarlet, Golden Souvenier, Bragg's Antagonist, Robert Burns, Col. Baker, Ansell's Unique, Baron, Cleopatria, Mrs. Rushton, and La Tour D'Auvergne,	2 00
For the best six varieties, to James Wilson, for Model, Melanie Adam, Cheltenham Queen, Constantia, Minerva, and Standard of Perfection	1 00
For the best display of annual and perennial flowers, To Wm. Newcomb,	2 00

SANFORD HOWARD, Ch'n.

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VEGETABLES.

The committee on vegetables report that the exhibition of vegetables was very choice; the exhibitors having brought forward several new and delicious looking varieties.

John S. Gould, of Albany, exhibited five specimens of Kohl Rabi, Long Cucumbers, Savoy Cabbage, and Early June Potatoes. The potatoes were very large

E. C. McIntosh, two beautiful Egg plants, and some fine Kenyon Cucumbers. The Egg plants were much admired, and very large for thus early in the season.

B. B. Kirtland, Early Canada White Corn

Dr. Herman Wendell, Swiss Chard or Silver Leafed Beet. The tops or stems of the leaf of this vegetable are cooked and eaten as asparagus, and as far as appearance goes, they are the most luscious looking vegetable we have seen this season, their fresh, dewy and crisp, creamy stems, fairly made the mouths of some of the committee water, in spite of the epidemic; also, California acorn squashes. The seeds from which these squashes were produced, were forwarded to the Secretary of the Society from the patent office last spring, who distributed them They appear very fine, and are nearly a month earlier than the common summer squash.

E. P. Prentice, Mount Hope, magnificent Ox Heart cabbages, Golden Crookneck squashes, Scollop squashes, very fine, and four varieties of Tomatoes.

V. P. Douw, of Wolvenhook, Early Sweet Corn, Tomatoes and Early White Corn.

Joel Rathbone, of Kenwood, Purple Cape Broccoli, very fine; White Spine Cucumbers, Large Red Tomatoes, and Summer squashes.

PREMIUMS.

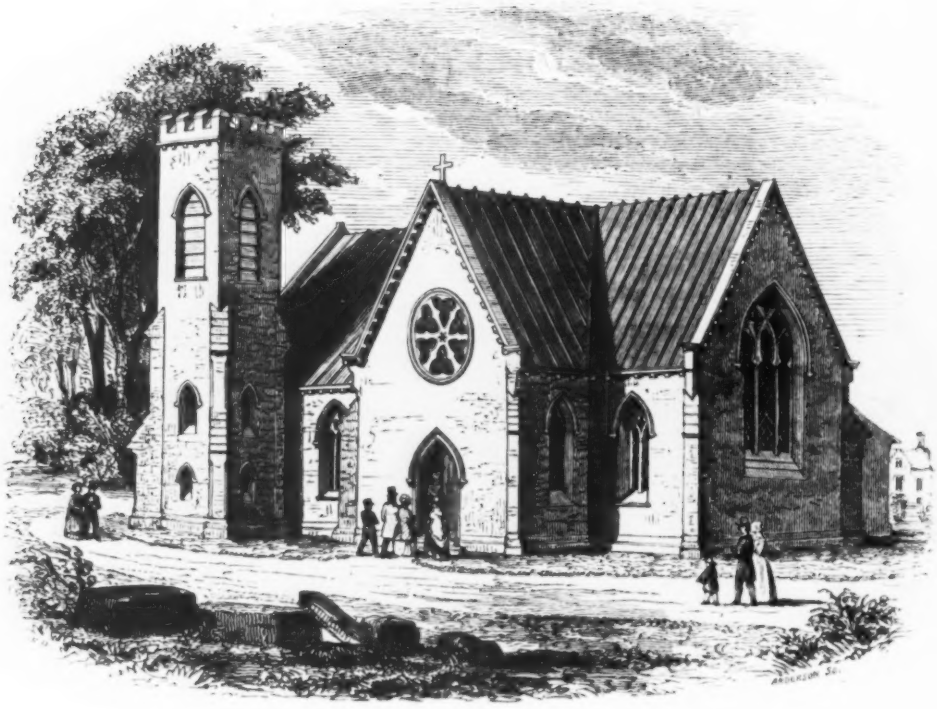
The premiums were awarded as follows:

On Corn—V. P. Douw, Wolvenhook,	$1 00
" Cucumbers—open culture—Joel Rathbone, of Kenwood,	1 00
" Egg-plants—E. C. McIntosh, of Albany,	2 00
" Squashes, Dr. Herman Wendell,	1 00
" Tomatoes, Joel Rathbone, Kenwood,	2 00

The committee also recommend a special premium, of $1 00 to Dr. Wendell for the Swiss Chard, and of $1 00 to E. P Prentice, for his four fine varieties of Tomatoes, being the greatest number exhibited by one person.

The committee are not certain that field crops come within their cognizance, but they cannot allow the very magnificent specimens of Flax, exhibited by William Newcomb, Esq., of Pittstown, to pass without mention. They were brought here by him as specimens from forty acres, and when we state that part of it measured between four to five feet high, and that the average was between three and four, those who are in the habit of growing this crop, will know that Mr. Newcomb has been very successful We believe that a statement of the crop, and of his manner of growing it, will be submitted to the State Agricultural Society.

ROBERT F. JOHNSTONE, Ch'n.



STUDY FOR A RURAL CHURCH.

[Hort. Sept. 1849.]